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Rumor Has It:
Investigating Teacher Licensure Exam Advice Networks

By Kira J. Baker-Doyle & Emery Petchauer

In many countries, including the United States, England, Korea, Hong Kong, and Japan, individuals must pass some form of examination for entry into or completion of a teacher education program (Wang, Coleman, Coley, & Phelps, 2003).[1] These exams are meant to act as gatekeeping mechanisms for teacher quality. In the majority of the countries mentioned previously, such exams are one part of a comprehensive set of evaluative criteria, usually developed by the certifying institution or country. However, in the United States, the exams are high-stakes, standardized tests developed and administered by private companies (Akiba, LeTendre, & Scribner, 2007). In addition, many U.S. exams have been found to be limited measures of preservice teacher ability (Angrist & Guryan, 2008; Goodman et al., 2008). Outcomes on these exams are related to factors such as academic preparation, grade point average, major, and race (Gitomer et al., 2011). Given the relationship between race and the exam, many scholars have argued that these exams are culturally biased against preservice teachers of color (Bennett, McWhorter, & Kuykendall, 2006; Flippo, 2003; Grant, 2004) and decrease the racial diversity of the teaching profession (Flippo, 2003; Memory et al., 2003). Given the centrality of examinations to teacher certification

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and the previous scholarship that identified factors related to exam outcomes, our study examined a related social factor: social capital.

Social capital considers the resources, information, and support that individuals or groups can access through their social networks. In this study, we researched the characteristics of the advice networks of 23 preservice teachers preparing for the basic skills teacher licensure exam in the United States, the most test-intensive country for teacher certification. Advice networks include the people whom an individual reaches out to regarding a particular problem or issue. In particular, we examined the web of relationships that participants had that provided them advice and information regarding teacher licensure exams. We analyzed the ways in which advice networks related to preservice teachers' persistence in exam preparation and their success or failure in passing the exams.

Thus our main research question was as follows: How does social capital function in preparing preservice teachers for the licensure exam? Our subquestions were the following: What are the characteristics of preservice teachers' licensure exam advice networks as the preservice teachers prepare for the licensure exam? Is there a relationship between any particular structural network characteristics and the pass rates and/or persistence in completing the exam for entry into their programs?

We employed a mixed methods approach to the study, which incorporated the use of social network analysis to analyze the characteristics of the structures and people in participants' licensure exam advice networks. This research occurred in the fourth year of a longitudinal study of the experiences of U.S. preservice teachers preparing for and taking a teacher licensure exam. In previous studies, our primary focus was on the racialized experience of test takers and the influence of identity on test preparation and outcomes. Our findings from Years 1–3 indicate that race is a salient aspect of preservice teachers' exam experiences (Petchauer, 2013, 2014) and that the experiences of fellow program members factor into test takers' self-efficacy beliefs (Petchauer, in press). Thus we were also conscious of these issues while we analyzed data for this study.

Our findings offer insights into the advice network trends of preservice teachers in a variety of contexts and the relationship between networks, study persistence, and exam success. Critical self-awareness and reception to messages from network members were important factors in exam success and persistence. Furthermore, the study provides a complex picture of persistence in exam study and identifies the roles of institutional structures in cultivating norms of persistence and collective support, particularly for racially marginalized students. The outcomes of this study offer implications for future research frameworks and for how institutions under similar professional testing mandates can support preservice teacher preparation for licensure exams.

Background Literature and Conceptual Frameworks

Teacher Licensure Exams in the United States

Since the competency movement of the 1980s, policy makers in the United States have sought to link teacher quality to paper-and-pencil licensure exams. This movement began with a focus on knowledge of teaching and teaching content as capstone requirements. It then grew to include "basic skills" in reading, mathematical computation, and writing as requisites for candidacy (i.e., program admission). Today, 41 U.S. states require students to pass a basic skills test before admittance into a teacher education program (Petchauer, 2012). As noted earlier, the position of licensure exams as quality filters is not limited to the United States. Increasingly, countries around the world have come to rely on exams as mechanisms to ensure and increase teacher quality (Wang, Coleman, Coley, & Phelps, 2003).

These exams and their role as gatekeepers affect all students who wish to become teachers. Like other high-stakes standardized exams, however, licensure exams have been criticized for their mediating effect on the quality and diversity of "qualified" candidates due to their limitations in measuring pedagogical skills of candidates and the influence of social factors, such as race and identity, on outcomes (Akiba, LeTendre, & Scribner, 2007; Gitomer et al., 2011; Tyler, 2011). A key study by ETS, which makes and administers the most widely used licensure exam series, Praxis, signals the relationship between race and this gatekeeper. Analyzing data from more than 77,000 first-time test takers between 2005 and 2009, Nettles et al. (2011) found that significant gaps exist between Black and White test takers on all portions of the basic skills exam. Findings from qualitative studies on this topic further unpack this quantitative finding. Bennett et al. (2006) found that Black and Latino/a students who pass the exam typically see fewer obstacles, seek out study opportunities more often, and experience phenomena such as stereotype threat less often compared to Black and Latino/a test takers who do not pass. In previous stages of our study, Petchauer (2014) found that the comprehensive test event can become a racialized experience with identity threats for some Black test takers because of interactions with proctors and other test takers and because of the technical means of test administration (Petchauer, 2013).

Overall, the picture that emerges from this small body of literature is that performance on licensure exams concerns much more than simply demonstrating content knowledge during a test session; social factors such race and identity can have an impact on outcomes. Yet, there are still questions as to how these social factors influence outcomes. For example, where do the social messages that influence identity threats come from? Can we see patterns in types of messages or forms of support in the social circles test takers inhabit? In this study, we use social network theory as a lens to understand the ways in which social interactions may shape test-taking experiences and outcomes.

Social Network Theory

In examining the dynamics of networks, we are able to trace ways in which messages, ideas, and information (social capital) about the exams travel through webs of relationships and influence test takers. Our conceptual framework, *social network theory*, centers on how social capital operates (Adler & Kwon, 2002; Anheier, Gerhards, & Romo, 1995; Portes, 1998). Social networks are complex, multilayered, and dynamic systems that can prove difficult to quantify. However, social network scholars have identified several key principles that appear to hold relatively constant across multiple studies. One principle is based on Granovetter's (1973) "strength of weak ties" argument that networks that are open (few links among network members) and diverse (individuals come from various communities or demographic backgrounds) provide higher levels of new information and spur innovation (both forms of social capital; see also Burt, 2001). Examples of this phenomenon are often referenced to business organizations' efforts to stay innovative and competitive. For example, Hansen's (1999) study of 41 technology companies working to create new products found that companies whose weakly tied subunits exchanged less redundant information innovated more quickly than companies whose units stayed isolated.

Another principle is that closed (densely connected) networks provide high levels of trust and stability (Lin, 1999), which is another form of social capital that is sometimes referred to as *collective social capital* (Baker-Doyle, 2011). An individual or organization harnessing this type of social capital can be seen in community organizing work when organizers work to gain power by developing a densely connected network of community members. Although weak ties have been lauded for their ability to foster innovation, strong ties are not irrelevant in social networks; previous research has shown that strong ties can provide a sense of stability and are more motivated for assistance (Granovetter, 1983). Krackhardt and Stern (1988) noted that strong ties are especially important for organizations when they are trying to handle a crisis. Although these principles seem somewhat contradictory, they make sense when we consider that social capital can exist in various forms. Thus one must consider the *form* of social capital that an individual or group would like to nurture before developing particular networking strategies.

Even though there are few studies on preservice teacher networks, there is a growing body of research on teacher networks (Daly, 2010). Social networks have been found to be an important aspect of how teachers develop professionally and use curricula (Coburn, 2005; Coburn, Choi, & Mata, 2010; Rienties & Kinchin, 2014), develop leadership capacity (Friedkin & Slater, 1994; Spillane, Halverson, & Diamond, 2004), innovate in their practices (Frank, Zhao, & Borman, 2004; Moolenaar & Sleegers, 2010), participate in school reform (Daly, Moolenaar, Bolivar, & Burke, 2010), and support student achievement (Pil & Leana, 2009). Baker-Doyle's (2011) research on first-year teacher support networks found that

new teachers' support networks operated within social network theory principles: Teachers who built open, diverse support networks demonstrated higher levels of innovation in their practice, and teachers who developed closed, dense networks in their schools often reported high levels of comfort and security in their school communities. For the present study, social network theory directed us to understand how the characteristics of the ties between preservice teachers and their personal advice networks about the exam might relate to the preservice teachers' persistence in studying for the teacher licensure exam and exam success.

Persistence

There is little research on students' persistence in exam preparation per se; the majority of research on student persistence has focused on persistence in college or on high school completion (Allen, 1999; Bean, 1985; Tinto, 1997). Persistence in these areas is generally defined as students' progress toward degree completion (in other words, whether a student graduates). The research base on persistence in college is quite vast. Such studies generally focus on the variety of complex social and organizational factors that influence persistence, and they highlight a strong connection between engagement and persistence (Braxton, Jones, Hirschy, & Hartley, 2008; Cabrera, Nora, & Castaneda, 1993). Yet the majority of these studies work to develop frameworks that identify what *causes or affects* persistence. Because most studies define the construct of persistence as an either—or dichotomy (a student either stays or leaves), few provide frameworks or definitions for what persistence looks like or how it is enacted (Horstmanshof & Zimitat, 2003; Tinto, 1988).

In our study context, preservice teachers were allowed to make multiple attempts to pass the teaching licensure exam and often engaged in various forms of preparation for the exam. As such, our definition of persistence had to be more dynamic than "stay or leave." Thus, rather than using a dichotomous measure of persistence, we developed a scale of *engaged persistence*, measuring the preservice teachers' intellectual, temporal, procedural, and emotional energy in preparing for and committing to passing the exam (see Table 1). This framework allowed us to examine what persistence looked like across these categories and how the various categories of persistence related to networking characteristics and exam success. Here we do not assume that persistence invariably leads to passing the exam; students could have a high level of persistence yet still fail the exam. Conversely, some students can have a lower level of persistence and pass the exam. Our measure of engaged persistence is meant to examine a student's effort, engagement, and commitment to passing the exam.

We drew from research on student engagement, commitment, and persistence to develop our engaged persistence framework. We were influenced by Rosen's (2014) integrative concept of engagement–commitment as the temporal, emotional, social, and intellectual "space" that individuals apportion to a project or identity in their

Table 1
Engaged Persistence Scale Rubric

	Persistence			
	0 (very low)	*1 (low)*	*2 (average)*	*3 (high)*
Procedural factors	No preexam planning or follow-up. Did not continue in program if not successful with exam the first time.	Minimal planning or follow-up. May have retaken the exam once.	Sought out information on how to pass successfully in advance. Followed suggested procedures. May have retaken exam 2–3 times.	Sought out information on how to pass successfully in advance from multiple sources. Followed suggested procedures. May have retaken the exam more than 3 times.
Intellectual factors	Little to no thought about preparing for exam.	Self-assesses ability to take exam.	Self-assesses ability to take exam and studies according to self-perceived	Self-assess ability to take exam and seeks out others' feedback. Creates a detailed study plan based on multiple factors and needs.
Temporal factors	Little to no time spent preparing for exam, studying, or reaching out to others.	Little advanced study or planning; examples include looking at exam Web site or chatting with peers before test.	Minor part of study routine in college studies and/or somewhat consistent study according to needs.	Major part of routine in college studies and/or consistent study according to needs.
Emotional factors	Neutral or nonevident emotions about exam.	Some generalized feelings about the exam; no impact on day-to-day activities or behavior.	Feelings about the exam motivate planning and study.	Emotions strongly emphasize reaching study goals and exam success and/or impact day-to-day emotional state

lives. Rosen argued that the degree to which a project "takes up" space in each of these realms can indicate a student's commitment to and engagement in the task. From this broad concept, we identified four areas that are frequently identified in literature on student engagement and persistence: procedural (following guidelines, doing what is required to move forward), intellectual (self-assessing needs and the academic effort made to meet needs), emotional (a socioemotional intent to persist), and temporal (the amount of time dedicated to meeting needs).

The first category, procedural, was influenced primarily by literature on student engagement. Although cognitive and affective engagement have been well-researched concepts in this field (Nystrand & Gamoran, 1990), Woodward and Munns (2003) have suggested that another important aspect of engagement is students' attention to completing procedures efficiently and effectively (which they call *operative engagement*). There are a number of recommended ways to prepare for teacher licensure exams, including researching test sites and dates, registering for a test, locating study materials, taking practice exams, preparing financially, and, if necessary, completing paperwork for special testing accommodations. Preservice teachers' attention and engagement in such recommended tasks represent a procedural engagement and persistence toward successful completion of their exams.

The intellectual category draws from a range of frameworks that consider academic engagement or success as factors contributing to persistence in college (Astin, 1984; Bean, 1982; Cabrera, Nora, & Castaneda, 1993; Metz, 2004; Tinto, 1993). Such frameworks typically include academic and social engagement as key factors influencing persistence. Yet several studies have differentiated between learning goals and performance goals in academic persistence literature (Dweck, 2006; Miller et al., 1996). Learning goals focus on developing understandings required for meeting academic competencies. Performance goals aim to reach specific quantitative standards, such as getting a particular grade in a course or on a test. Miller et al. (1996) found that student persistence is highest when students have strong commitment to learning goals versus performance goals. Taking these findings into consideration for our framework, we identified "intellectual" engagement–persistence as a measure of students' reflection upon their cognitive needs and their efforts made in meeting those specific needs.

As mentioned previously, social-emotional factors have also been found to play a major role in student persistence. Similarly, in commitment literature, an overriding theme is psychological attachment to an organization or goal (O'Reilly & Chatman, 1986; Strauss & Volkwein, 2004). Furthermore, there is extensive literature on the concepts of self-efficacy as it relates to emotional engagement and persistence in academic tasks or school (Bandura, 1997). These bodies of literature, as well as literature on goal orientation (Dweck, 2006), contributed to our conceptualization of the emotional category in the engaged persistence framework. In this category, we considered the emotional energy or "space" in a preservice teacher's affective domain dedicated to exam goals. In looking at qualitative data, we considered the

degree to which the exam played a role in preservice teachers' socioemotional lives, ranging from an insignificant task to a goal that deeply affected emotional state and sense of self.

Finally, the last category in our framework, temporal, measures the amount of time in students' lives that they dedicate to studying and preparing for the exams, according to their perceived needs. The temporal factor is a measure of investment, as in how much time students devote to exam preparation within their personal schedules of responsibilities and interests. Several scholars have examined persistence from the perspective of investment theory (Okun, Ruehlman, & Karoly, 1991; Rusbult, Drigotas, & Verette, 1994). In Okun et al.'s (1991) study on student persistence in college, investment was highly correlated to student intent. Thus the temporal measure offers an additional factor contributing to our view of the students' goals and intentions in preparing for the exam.

Study Description

Context

Participants in this study were from preservice teacher populations at Douglass College and Park University, two public universities in the U.S. Northeast. We use pseudonyms throughout this article for all proper nouns. Working with two institutions allowed us to compare social networking practices in different contexts; we could examine whether there were particular networking practices or structures that were consistent across institutions and how contextual factors may have influenced networking behavior. In total, our study consisted of 23 participants, 9 from Park University and 14 from Douglass College (see Table 2).

Douglass College was an Historically Black College/University (HBCU) with an enrollment of approximately 2,400 students. At Douglass College, students had the opportunity to participate in a weekly exam preparation workshop led by Petchauer (attendance was voluntary). The majority of students in the sample were Black (92%),[2] which roughly represented the demographics of the college. Park University was a satellite campus of a public university with approximately 3,000 students. Park University did not provide any formal preparation support, and 77% of students in the sample were White, which also reflected school demographics. At both institutions, preservice teachers were required to pass the basic skills exam to enter the education major. Neither institution put a limit on the number of times a student could attempt to pass the exam.

Methods

Our research occurred during Year 4 of a longitudinal study on preservice teachers' experiences taking licensure exams. In Years 1–3 (see Petchauer, 2013, 2014, in press), data were primarily qualitative, following the methodologies of previous

studies on this topic (Bennett et al., 2006; Graham, 2013). In this study, conducted in Year 4, we adopted a mixed methods approach to data collection and analysis, adding social network analysis to our qualitative methodologies. Furthermore, we expanded our research sites from one school (Douglass College) to two (Douglass and Park University).

To conduct social network analysis, we collected quantitative social network data by distributing an ego-centric sociometric survey to participants, a typical approach for gathering data on ego-networks (Daly, 2010). The sociometric survey asked participants to identify the individuals (network members) they sought for advice and information about the licensure exam and to describe network members' interactions, connections, and backgrounds.

We collected qualitative data in a similar fashion as we did in Years 1–3: through focus group interviews, seven in total, within 2 weeks after students took the exam. Modifying the interview protocol from Bennett et al. (2006), we asked participants to describe their feelings about the licensure exam, how they prepared for the exam, and their experiences taking the exam. We followed up with participants 6 months after the interviews to learn their exam results and related enrollment status in the program.

Because we had a relatively small sample, we used the quantitative social network data to give us a general picture of network characteristics and highlight trends or relationships between factors that could direct us in our analysis of the qualitative data. We conducted simple descriptive quantitative data analysis and Pearson correlations using SPSS software to look for relationships between these factors and pass–fail rates and persistence. Because we know from prior research

Table 2
Participant Demographics

	Number of participants
Gender	
Male	3
Female	20
Race/ethnicity	
Black	14
White	8
Hispanic	1
School	
Park University	9
Douglass University	14
Age (years)	
18–24	21
25–39	1
+40	1

that race relates to testing outcomes (Gitomer et al., 2011; Nettles et al., 2011), we also conducted partial correlation calculations holding for participants' race/ethnicity. We coded qualitative data deductively based on social network attributes (network size, advice/information from network members, network density, frequency of communication, and general characteristics of networks and network members) and the engaged persistence framework. Furthermore, we took an inductive approach to examining participants' feelings taking and preparing for the exam, with a focus on themes that related to network characteristics and engaged persistence.

We coded participants' engaged persistence in two ways. First, we deductively coded interviews for participants' statements that indicated practices related to engaged persistence using a weighted coding scale. For example, when one participant, Joshua, stated, "I only studied for about 4 hours tops," this statement was coded as low (1) for the temporal factor, because it was not a major aspect of his academic study. The weighted framework provided qualitative information on the persistence practices as well as information about the frequency of factors reported within and across participants.

Second, we used a holistic scoring approach to coding participant engaged persistence. We developed profiles for each participant based on the four dimensions of the framework and ranked their engaged persistence in each category toward a single rank that indicated their engaged persistence level. For example, our profile of Destiny revealed that she self-assessed her study needs, sought out information required for exam preparation, and allotted a significant amount of time in her study schedule to meet her needs. In addition to allotting herself time to study, she was emotionally invested; her drive to succeed in the test affected her daily emotions. Thus Destiny received the highest ranking in the framework (3) as her holistic rank. We checked this ranking against our weighted qualitative coding findings as a validity check and used the holistic ranking for quantitative analysis.

As a final stage of analysis, we looked for patterns in the survey data and how these patterns related to qualitative interview data. To illustrate what these networks and findings look like in the lives of students, we then selected four cases (two from each institution) that represented the range of exam success and persistence outcomes. Our findings section discusses general patterns in quantitative and qualitative data and then provides snapshots of each case.

Findings

In this section, we share findings from our social network analysis and our qualitative data. We organize our findings into three subsections. The first two subsections primarily report on the major social network analysis patterns and relationships found between network data and exam persistence and passing rates. These two sections set the stage for the third section, a more holistic reporting of the data through case descriptions of four individuals. The four cases represent a

range of high–low persistence and pass–fail cases and demonstrate how many of the patterns revealed in the quantitative data functioned in participants' lives.

Network Characteristics and Exam Success

> She was in my corner the whole time . . . having someone that passed to talk to me, it was just like "OK." It grounded me. (Bernice, student at Douglass College)

Participants displayed a wide range of network characteristics, having from 3 to 10 people in their networks with a mean size of 5.39. Table 3 displays general descriptive data of participant networks. Figure 1 visually illustrates the range of advice network structures we found. In the sociometric survey data, there was a statistically significant negative correlation between passing the exam and tie strength as well as frequency of communication (see Table 4).[3] In other words, according to the quantitative data, participants with stronger ties (closer relationships) and more frequent communication with members in their networks were more likely to fail the exam. Conversely, participants with weaker ties (more distant relationships) and less frequent communication with members of their networks were more likely to pass the exam. The qualitative data helped explain these trends. First, it was clear that the test preparation seminar in which many students at Douglass College voluntarily participated shaped their network characteristics by giving them strong ties with one another. This may have skewed the correlation between tie strength and pass–fail exam data; that is, students with the greatest needs may have chosen to participate in the preparation seminar, and there they built close ties as a cohort. Thus close ties

Figure 1
Examples of exam advice networks:
(a) network members = 5 (average size), density = .33 (low); (b) network members = 10 (large), density = 1 (high). Size of node indicates tie strength. Number of network members excludes participanty (black node).

a   b
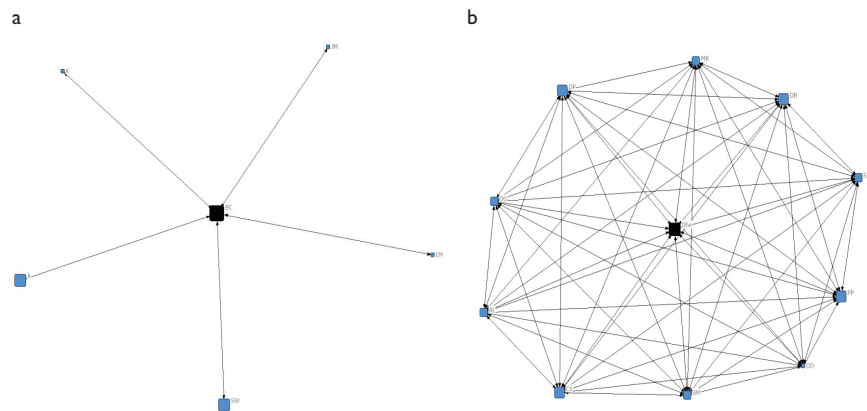
(among presumably less academically prepared students) related significantly to failing the exam. Despite the role that the seminar played in some students' networks, other patterns appeared that offered further explanation of why weak ties might be associated with exam success, as described in the following subsections.

Tie strength and advice. The first pattern was in the characteristics of advice that the participants received from their weak or strong ties and in the weight they gave to this advice. Participants who passed the exam and displayed a higher number of weak ties in their networks spoke of how they tended not to trust or take too seriously the opinions of individuals in their networks to whom they were not close. For example, one participant (Bernice) noted that she had heard about how difficult the exam was "from people that probably didn't study" and therefore did not fully trust their opinions. Another student (Shana) agreed that she dismissed many of the naysayers in her class who said, "That's such a hard test, it's so scary, expect to take it multiple times," and that she did not feel much social pressure. The survey findings regarding the relationship between frequency of communication and exam success were related to this attitude of ignoring "the crowd." Destiny explained this phenomenon: "I think that people get influenced by others—that's why I don't like talking about [the exam] and stuff with everyone else . . . because they always talk about . . . what they gonna do and then that just gets everyone amped up."

Participants who passed the exam did take task-specific advice seriously from weakly tied network members. Examples of this advice-seeking behavior included asking where to get practice exam materials; asking for help or advice on specific aspects of the exam, such as math content; and asking about best times to register and study for the exam. For successful students, weak ties tended to be a good source of explicit information yet were less reliable in terms of opinion-oriented advice that was highly subjective due to individual differences.

Conversely, students who were not successful in passing the exam and who had many strong ties in their networks often spoke about how they valued the

Table 3
General Network Characteristics

	M	SD
Network size	5.39	2.426
Network gender diversity	0.658	0.253
Network race diversity	1.83	0.576
Average tie strength	3.935	0.558
Average frequency of communication	2.57	1.12
Network density	0.47743	0.277

Note. N = 23. Gender diversity indicates ratio of men to women in a network, where 0.5 = 1:1. Race diversity indicates the degree to which a network is racially diverse, where 1 = no diversity (all one race), 2 = up to 50% of one race, and 3 = less than 50% of one race. Tie strength and frequency of communication are on a scale of 1–5. Density of network ranges from 0 to 1.

opinions of other people in their networks and how these opinions had an impact on their test-taking perspectives and experiences. Although there were certainly cases of strong ties breeding negative perspectives about the test, in several cases, the presence of positive support from strong ties cultivated a faith that one would pass the exam but did not necessarily lead to targeted acts of preparation. Patricia recalled how her friends supported her belief that she would pass:

> Me and Tammy were talking about it the other day. . . . I still have faith in the back of my head I'm going to pass it. . . . So like, that's my mission. So it's like, in the back of my head, I get discouraged, I'm human, but I have faith that I'm going to pass it.

In such an instance, Patricia's close tie with Tammy (another participant who struggled with the exam) provided her with opportunities to discuss her "faith" to pass. Yet Patricia made few changes to her study routine after failing the math portion of the exam. The close tie with Tammy was a means to discuss her "faith" to pass, but it was not a means for resources or information that might help her to pass.

Tie strength and social pressure. Another pattern among participants with strong ties in their networks was the influence of social pressure from expectations on their outlook and exam experience. Tammy described her experience taking the exam and how much the expectations of her friends and family weighed on her throughout the test:

> I knew when I was taking it, I was like, "This is not going to work in my favor today." Now I have to go home and I have to tell it to my husband, and I have to

Table 4
Network Characteristics and Exam Success

		Passing
Network race diversity	Pearson correlation	-.543**
	Sig. (1-tailed)	.004
	N	23
Tie strength	Pearson correlation	-.524**
	Sig. (1-tailed)	.005
	N	23
Frequency of communication	Pearson correlation	-.464*
	Sig. (1-tailed)	.013
	N	23
Network race diversity (controlling for participant race)	Pearson correlation	-.335
	Sig. (1-tailed)	.064
	Df	20

*p < .05. **p < .01.

come here and tell it to my peers, and I have to go to bed with it at night. I know that . . . here we are again.

In the same vein, Wayland reflected on how important it felt not to let down his professor (with whom he had a strong tie) while he was taking the exam: "I was thinking like in the midst of the test, I couldn't let you down. Because like I said, you taking time out to help us, so I had to keep that in mind."

Network racial diversity. Finally, we did find one major statistical difference in the relationships between network characteristics and exam success in terms of race. When we did not control for race, network diversity (the degree to which a particular race/ethnicity was dominant in a participant's network) had a significant negative correlation with exam success. This means that more racially homogeneous networks were associated with exam failure and that more diverse networks were associated with success. However, when we held for race, the significance of this correlation disappeared. Given this finding, race is likely a proxy for other factors, such as level of preparedness across the two racially homogenous campuses of Douglass College and Park University in this case. This interpretation is also supported by our qualitative data and research in previous stages of the project. Prior to this study, we studied two previous cohorts of students and found that considerations about race were a salient part of the test event for some Black test takers (Petchauer, 2013, 2014). However, in this stage of the study, direct attention to race was not present in qualitative data; that is, we found no evidence that participants gave attention to the racial identification of their network members.

Network Characteristics and Persistence

I always believe in persistence. Persistence is what gets me through everything. I have to be persistent to get what I want. (Jasmine, student at Douglass College)

In looking more closely at persistence, we observed trends that were more sophisticated than a simple pass–fail distinction. As mentioned previously, our engaged persistence measure examined the energy and commitment participants devoted to exam preparation to meet their academic needs across four categories: procedural, intellectual, emotional, and temporal. Upon initial analysis of survey data, we found a statistically significant negative association between network gender diversity and persistence. In other words, students with less gender diversity in their networks were less likely to pass the exam. Yet, controlling for race as a factor, this significance disappeared and other factors surfaced, such as network size, density, and encouragement from network members (Table 5). Although not statistically significant, there were strong positive correlations between engaged persistence and network density, exam success, and network confidence. Hence network characteristics that related to persistence looked slightly different than those that related directly to exam success; density, or the degree to which members in

a network had ties to each other, and network size played key roles in participants' persistence levels. Furthermore, persistence had a positive relationship with exam success. In the following, we describe some of these relationships in detail.

Network confidence and institutional support. The impact of network confidence (the degree to which individuals in a network believe the participant can pass the exam) on persistence levels was observed frequently in the qualitative data. For example, Destiny, who demonstrated high levels of persistence, described how a friend pushed her to prepare for and take the exam, giving her confidence to keep going, even after failing once: "She was on me, she was like, 'You got to take it this year, you got take it, you got to take it!'?" Tammy, another participant with high persistence levels, was acutely aware of the positive support she received from her relatives, who would call to wish her luck before she took any exam.

We also considered the relationship between institutional support and the network characteristics in relationship to persistence. Looking generally at the persistence statistics, we saw that students at Douglass College tended to have higher levels of persistence than students at Park University (Douglass students averaged 1.92

Table 5
Network Characteristics and Persistence

		Persistence
Network size[a]	Correlation	-.284
	Significance (1-tailed)	.100
	Df	20
Network density[a]	Correlation	.215
	Significance (1-tailed)	.168
	Df	20
Network confidence[a]	Correlation	.028
	Significance (1-tailed)	.451
	Df	20
Exam success[a]	Correlation	.388
	Significance (1-tailed)	.037
	Df	20
Network gender diversity[a]	Correlation	-.312
	Significance (1-tailed)	.079
	Df	20
Network gender diversity	Pearson correlation	.446
	Significance (1-tailed)	.016
	N	23

[a]Controlling for participant race.

on the persistence scale, whereas Park students averaged 1.44). This finding may have been an effect from the test preparation seminar at Douglass College, which all but two of the Douglass participants attended. In this way, a centralized means of preparation available to test takers helped them to persist, whereas students at Park University did not have a similar means of preparation available to them. This interpretation coincides with findings from other stages of this study in which participating in preparation seminars reduced anxiety and negative affective states for Black test takers and increased positive affective states for them as well (see Petchauer & Baker-Doyle, 2014).

Network density. In the case of the density factor, the qualitative data revealed that the test preparation seminar played an even more prominent role in the association between persistence and network characteristics. Almost all participants who reported a high level of persistence and had medium to high (greater than .30) network density referred to the role of the preparation seminar (i.e., the "cohort"). The seminar provided a regular time and space for participants to prepare for the exam. Furthermore, students in the Douglass cohort exhibited a different sense of expectation than students at Park University. For example, Bernice, a student at Douglass College, described students who did a minimal amount of studying for the exam as "slackers," whereas Patricia, a Park University student, noted that most people at her school considered exam registration as the primary form of preparation for the exam. As in previous research on density in social networks (Adler & Kwon, 2002; Moolenaar, Daly, & Sleegers, 2011), the greater number of shared ties between individuals in the seminar cohort reinforced a shared set of norms and practices.

Cases Across the Spectrum

In addition to looking across qualitative data for trends that could help to explain quantitative patterns, we also examined the characteristics of participants on an individual basis in regard to their networking behaviors and their exam experiences. Here we report on four cases that represent the different ends of each spectrum of the measures we used to compare outcomes: low–high persistence and passing–failing the exam. In presenting these four cases, our goal is to represent how vastly different networks can look for preservice teachers preparing for exams with regard to characteristics, testing and/or persistence outcomes, and several other factors that affected these relationships, including awareness of academic need and reception to support or advice.

Ruby: Low persistence, exam failure. Ruby was a Black female student at Douglass College. She had a large network with nine members and a high level of strong ties among network members (see Figure 2). About half of her network members were a cluster of students in the preparation seminar, and the other half were family members, some of whom also took the exam while pursuing the field

of teaching as well. Ruby felt pressured by family members to pass the test due to financial concerns yet did not receive positive support or models from them. Ruby's sister had taken the exam and did not pass it. She recalled her brother's response to the fact that she would soon take the exam as well:

> Yeah, two years ago [my sister took it], and it was my brother who paid for [my sister], and I remember 'cause like when she got the grade, the test scores back, she didn't do well. And so my brother's like, "Dang, I just spent like $160 for you and stuff." . . . So like when I told my brother I was taking it, he's like, "I'm not paying for it 'cause J failed and stuff." . . . And my sister, she was kind of bummed out about it so she like changed her major, she didn't become a teacher. (Ruby, focus group interview)

Like her sister, Ruby did not intend to continue taking the exam if she failed repeatedly. She noted,

> I'll keep going until a certain limit. Like I'll take it one more time and if it's not, I'll take it another time, probably three times, that's it.

Ruby did not feel that it was possible to study for a standardized test such as the Praxis exam because the subjects are too broad. She noted,

> You can't prepare. . . . Like say if we have a math test it's just going to cover Pythagorean theorem. Then I can prepare for just the Pythagorean theorem . . . it's

Figure 2
Ruby Network Map
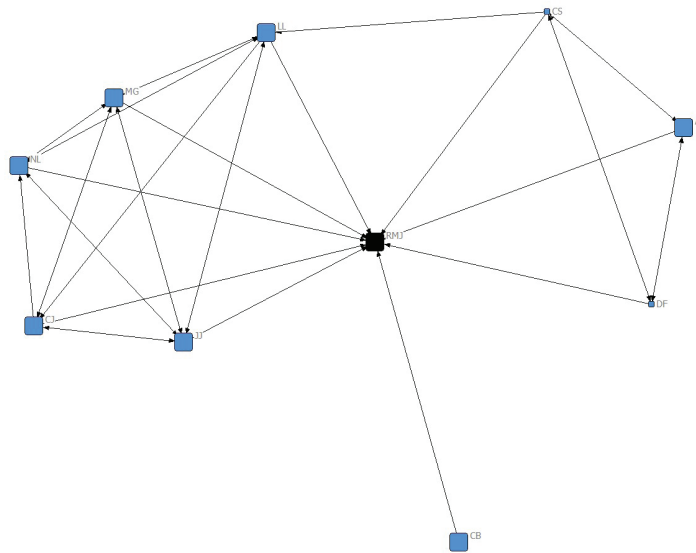
just like so broad and you can't get into detail about what you have to be prepared. So it's just like you can't be prepared.

She felt that studying would help you know what the exam "was like" but could not help to increase a test taker's score. She also felt certain finality to the exam, mistakenly believing that a low score stuck with her even if she retook it. Ruby took the exam but did not pass. She had planned on taking it again but had not done so before the end of this study.

Stephanie: Low persistence, exam success. Stephanie was a White female student from Park University. There were four individuals in her support network, yet none knew each other, indicating an extremely low network density (see Figure 3). Furthermore, the individuals in her network ranged from family members to work colleagues to friends; there was a low level of homophily in her network. Stephanie was very aware of her academic needs and sought out particular people for advice. She felt that she was not strong at math, so she asked colleagues and friends who had taken the test previously about strategies for the math section. Yet, beyond such networking, Stephanie did not spend time studying for the exam. She felt that although one could study for a standardized test, a major aspect of exam success was test wiseness: Knowing how the test worked and particular test-taking strategies, such as timing, were more helpful than content knowledge. She passed the exam the first time she took it.

Destiny: High persistence, exam success. Destiny was a Black female student at Douglass College. Her network was diverse and balanced between the strong ties she developed with preparation seminar members and weaker, less dense ties she developed outside of her central group of friends (see Figure 4). She was critically

Figure 3
Stephanie Network Map
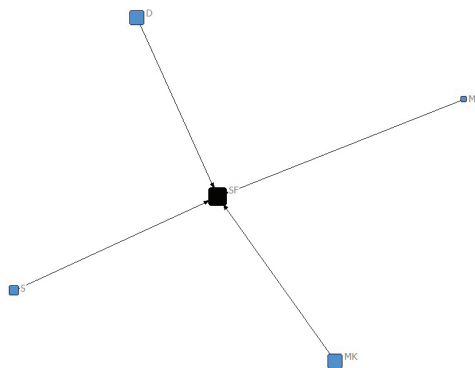
aware of the opinions of others in her cohort and sought information to help her pass the exam rather than opinions, particularly negative opinions. In the following, she describes the difference between the approach of her friend Rose, who was heavily influenced by others' opinions, and her own approach:

> Rose for instance, she listens to what other people say like, if someone said they took the test, she'd be like, "Was it easy, was it hard?" And I'm like, "You're different from them. I don't think you should listen to what—" Like, I don't listen to what other people way when they say that the computer [test] is harder, or the thing is harder—'cause I know I'm different so I'm not going to necessarily think that's going to be harder than that.

Destiny also indicated a strong awareness of her needs as a learner and a belief that it was possible to study for the test, particularly by learning specific test-taking strategies and practicing them by simulating the timed, high-pressure test setting. Overall, Destiny repeatedly discussed her determination to become a teacher, no matter what challenges lay ahead. "I gotta do what I gotta do" was her mantra to herself as she prepared for and went in to take the test. After three attempts, Destiny increased her scores by 10 points and passed the exam to continued on in the education major.

   Tammy: High persistence, exam failure. Tammy was a White second-career preservice teacher at Park University. Her network was very densely connected, with

Figure 4
Destiny Network Map
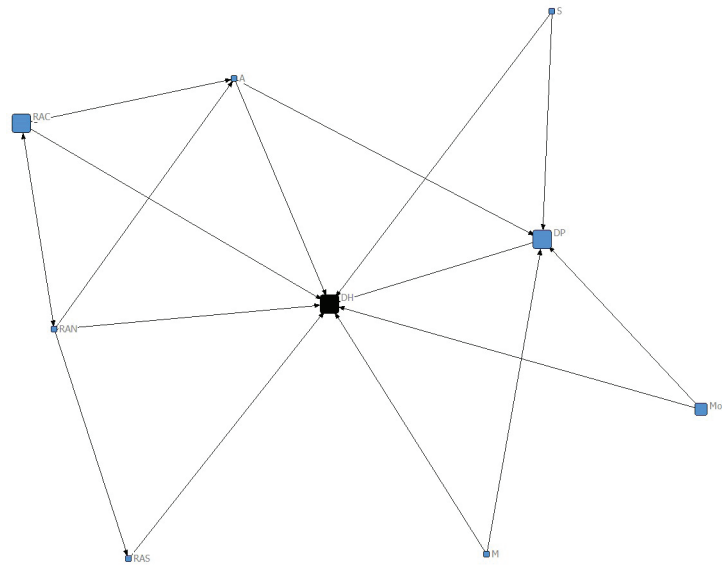
strong ties; it was mainly family and friends (see Figure 5). Tammy relied heavily on the opinions and beliefs of others about the test to prepare. She conducted an informal survey of classmates to learn about their opinions about the difficulty of the test and even tried analyzing their responses for gender differences. She spent long hours discussing the impact of the test on her career with those in her network. Despite her conversations with others, she was unclear as to how to specifically prepare for her needs. She described what she knew about how to take the test:

> I do think there's a trick. You have to know how to take a test. There's a method—I don't know it. [laughs] I'm still struggling to learn the method myself. There is, there's a way to take them. And I just don't know the trick. And I never did. You know, here I am 42 years later, I've taken tests for a long time, and I still don't really get the method.

Tammy struggled specifically with the math portion of the exam and stated that she had learned math 20 years previously and was not aware of some of the new approaches and terminology used in the test.

Tammy made a detailed study plan, sought out a tutor, and studied with him twice a week. However, she was being pulled in many directions at once, as a wife, mother, and student, and often found it difficult to balance her responsibilities with study time. She was under a lot of pressure to pass the exam from her family because of the financial expenditures she had had to make to return to school. Despite the time and effort that Tammy put into her exam preparation, she also had to identify an alternative career pathway owing to these pressures. She explained her plan and predicament:

Figure 5
Tammy Network Map
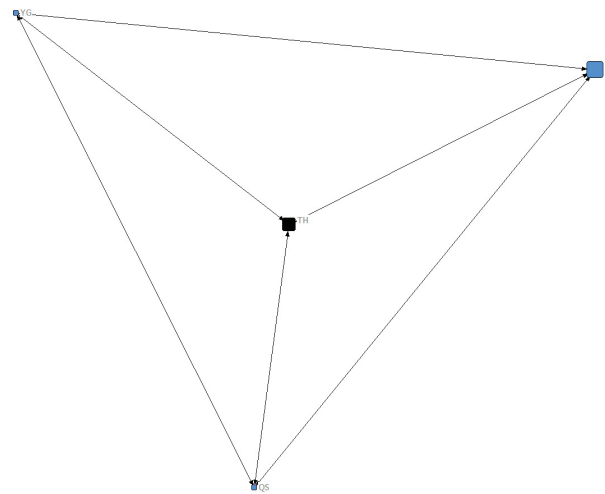
> I definitely will do something different because I can't really—I don't know how
> I—I can't really stay. You know, I have to get this done. I'm running out of time.
> Like I said, my age is against me. My age is against me, and the amount of debt
> I'm accumulating because I'm paying for—my husband and I are paying for every
> drop of this. I get nothing. So I've already, and here again, I'm already into this.
> I'm already into this for a lot of money. You know, and now here I am all the way
> down the line, and I can't fulfill my dream because of one math test. Just one.
> So it's kind of like, you know, I'm there. But this is going to really box me up,
> so if I don't pass this I'll try to take it again in November, I'll pray for a miracle,
> I'll do more tutoring. I'll go back, I'll certainly do my tutoring again, but I'm at
> a real crossroads.

Tammy spent many hours studying and taking practice exams but was unable to pass the math test after three attempts and dropped out of the education major at the school.

Patterns across the cases. Across these four cases, several themes are apparent. The first theme is how participants sought out and responded to advice in their networks. Students who passed the exam successfully sought out specific information relevant to their individual needs and employed a critical filter to others' opinions of the test. Network members with strong ties had a greater influence on participants' emotional and sometimes practical (i.e., financial) considerations of the test. Network members with weak ties were more likely to provide specific information to participants. This theme was also relevant to participant persistence. Participants who were highly persistent sought out positive emotional support from their strong ties.

A second theme evident through the case studies is participants' awareness of their needs as learners and their perspectives on the way to prepare for the exam. Participants who passed the exam talked about particular needs they had and believed it was possible to study and improve. Participants who did not pass the exam seemed unaware or at a loss about how to study or believed that there were "tricks" to passing. Participants with high levels of persistence believed they could keep trying and improve; participants with low persistence did not consider high levels of improvement possible.

A third theme was network diversity and balancing strong and weak ties. Participants who had strong ties and high levels of network homophily did not have access to a variety of information and perspectives on the exam. Furthermore, a lack of balance in either of these areas seemed to limit the participants' ability to develop a critical perspective of the test and/or others' opinions of the test.

The institutional organizations played a role in shaping students' access to support and network development. Students at Park University had no formal structures for support and had to seek help and make a plan of study on their own. Students were simply e-mailed a message that passing scores were required by a certain date to enter the program. Thus high levels of engagement–persistence in studying

and planning for the test were outside the norm or not a recognizable element of the school culture. At Douglass College, students were offered the opportunity to participate in a test preparation seminar, and many chose to enroll upon recommendation from those in their social networks. Their regular focus and participation in the seminar raised the normative standards for engagement–persistence at their institution.

Related to institutional support was the issue of financial support and study resources. In some cases, financial pressures caused higher levels of anxiety, and in others, they disrupted students' ability to take the test. The institution had some role in facilitating access to resources, yet in many cases test cost was another barrier for students to surpass. The financial factor is a challenge to untangle when investigating engaged persistence, because it crosses many domains in our framework and can also operate as an external controlling factor.

Discussion

The principles of social network theory provide a framework for understanding our findings. The survey data analysis reinforced and revealed the "strength of weak ties" principle of social network theory (Granovetter, 1983); participants with open networks and weak ties had access to outsider sources of information, which could offer new information to help participants prepare effectively for the exam. Furthermore, the data also showed the role of collective social capital in communities (Baker-Doyle, 2011; Lin, 1999); participants with denser networks had greater information redundancy in their advice networks yet higher levels of encouragement that supported persistence in exam preparation and engagement.

In addition to reinforcing well-known theories of social networks, our study also revealed interesting patterns relating participants' *reception* to information and resources and the relationship between reception and self-awareness. The key issue here is what filters individuals use in listening to members of their network and the degree to which they critically or strategically cultivate either their listening or their network to meet their needs. For example, Destiny, who had high levels of persistence and exam success, chose not to listen to individuals in her network who did not support her emotional needs. Furthermore, she cultivated a diverse network that offered her a multitude of perspectives and resources from which to choose. In contrast, Ruby, who had low levels of persistence and did not pass the exam, felt controlled by members of her network and listened to many of the negative and fearful opinions of the exam.

The identification of the role of reception in networks reveals several key understandings: (a) Opinions from strong ties are more difficult to ignore, and thus negative opinions from strong ties have a greater impact on perspectives; (b) self-awareness of one's needs (physical, intellectual, and socioemotional) is an important aspect of being able to filter and receive information from one's networks; and (c)

a balance of perspectives, from a diverse range of strong and weak ties, can offer individuals greater choice about from whom to receive information and support in their networks. These understandings carry implications for how to support preservice teachers in preparing for the exam from a network perspective as well as broader implications for learners in general.

The findings on reception relate to social network theory research on what Balkundi and Kilduff (2006) call *network cognitions*, or how individuals perceive their networks. There is a body of literature on cognitive network theory, which focuses mainly on how individuals' awareness of their networks and their understanding of how networks function shape their access to social capital (Kilduff & Krackhardt, 2008). Furthermore, Baker-Doyle (2010) identified a related concept, *expertise transparency*, which connotes the degree to which an individual knows or understands the expertise that individuals in his or her network hold. Yet little is known about how individuals *choose* to engage with or react to others that exist in their networks, and this concept opens possibility for further exploration.

Our study revealed new understandings about how networks function; furthermore, we developed insights into how persistence, or engaged persistence, behaves and relates to social and academic factors. We found that high levels of engaged persistence often appear as instances in which participants were reflective about their needs, deliberate in their planning, and determined that they would meet their goals, despite obstacles. Yet, on their own, these factors did not support persistence well; they were most effective in combination. For example, several students were determined to meet their goals yet did not have a clear sense of their needs and did not plan accordingly; they lived on hope and hope alone. Alternatively, some students were quite aware of their academic needs, yet this awareness produced anxiety and inaction rather than engagement and persistence.

Institutional structures and culture also had a clear impact on engaged persistence. Our study demonstrated that organizational features can have an impact on the expectations and culture of engagement. Planning for the exam, studying, and making space in one's personal schedule for test preparation was the norm for participants at Douglass College because of the high level of student involvement in the test preparation seminar. At Park University, the norm was simply to check the Web site for test dates and schedule an exam. The students who found a tutor or studied frequently were considered to be in academic trouble. Thus the institution played a role in setting the norms for engaged persistence through the opportunities it offered and the perceptions or expectations it had of the students. The institutions also influenced students' financial resources through their structural supports: Douglass students had access to study support through the cohort, whereas Park students needed to pay for their own tutors.

Racial identity appeared as a mediating factor in our statistical data, particularly in the area of persistence. However, race did not appear explicitly as a factor in our qualitative data. These findings raised additional questions for us, because previous

cohorts in Petchauer's (2013, 2014) research did show that considerations about race were a salient aspect of the testing experience for some Blacks. Although we did observe in the qualitative data that having a cohort, or strongly homophilous network, seemed to provide many Douglass participants with a sense of strong emotional support, we wondered if racial identity also played a role, because we saw some evidence in the statistical data. Might the students of color have sensed an additional kind of pressure from the gaze of others as to expectations for their academic performance and persistence? This is a question that we would like to pursue in future research.

Conclusion and Implications

Our study investigated the social advice networks of preservice teachers at two U.S. institutions as they prepared for standardized basic skills exams for entry into their teacher education programs. In regard to social networks, our findings support two known principles of social network theory: the strength of weak ties to provide new information and the role of collective social capital to provide emotional support. Furthermore, we identified the key role of reception in networking behavior, which we define as the way in which an individual filters messages from network members. A high level of self-awareness and critical understanding of network structures and functioning (such as the heavy influence of strong ties) are required for an individual to use reception in a strategic manner.

The findings regarding reception have implications for scholarship as well as institutional programming and support. Social network scholars may consider not only who and what are being connected in a network but also how information, opinions, and resources are filtered by participants and the factors that influence their reception. As mentioned previously, though this concept speaks to literature in the realm of network cognition, there is still much work to do to understand the dynamics of reception, filters, and choice in networking. From a programmatic perspective, instructors and institutions that are interested in helping to prepare students for entry exams may consider helping students develop a stronger awareness of their needs as well as an understanding of how to filter messages from their networks and cultivate meaningful support networks. Similar work is currently being conducted by S. Van Waes (personal communication, January 2014; see also Van Waes, Van den Bossche, Moolenaar, De Maeyer, & Van Petegem, 2013), in which Van Waes and colleagues are training instructors in how to strategically develop support networks. However, in most cases, strategic network training is rare in educational contexts.

The engaged persistence framework allowed us to identify the relationships between network characteristics and formative actions rather than only using a summative pass–fail measure. Indeed, our findings reveal a great deal more complexity when we consider students' engaged persistence and highlight the role of institutional

structures in cultivating engaged persistence behaviors by providing opportunities to develop positive support communities with strong ties. Furthermore, our quantitative data reflect a higher level of persistence among students of color across the board. Recent findings on the "effort–outcome gap" (Greene, Marti, & McClenney, 2008) suggest that we need to recognize and describe the often higher levels of engaged persistence in students of color, alongside test score outcomes or grades.

The understandings revealed about social networks and persistence in this study intersect in the concept of critical awareness. The findings demonstrate that an awareness of one's academic or emotional needs is the foundation for being strategic about networking or planning for study. These findings prompt the call for coaches and educators to provide opportunities for self-analysis of needs and goals and ongoing reflection and planning steps toward those goals. Such planning should not merely be academic but also social (i.e., strategic networking). In addition, institutions must develop a more critical awareness of the role of racial or ethnic identity in engagement and persistence and find ways to cultivate support *among* and *between* identity groups to foster a balance of emotional support and "outsider" information for students.

Through all the data presented here, it is clear that many more factors than academic preparation affect testing outcomes for teacher education students. An individual's social network and his or her receptivity to those in his or her social network can play a major role in the individual's study habits, self-efficacy, and access to resources. This finding is particularly significant in the context of teacher preparation because the licensure exams are the primary gatekeeping mechanism for individuals to become teachers in the United States. Our findings suggest that such high-stakes consequences may prevent potential teachers from entering the field for reasons not solely related to their academic ability.

Yet, even as this study provides evidence critiquing the effectiveness and fairness of the exams in controlling for teacher quality, the question remains, What can teacher educators do now? One problem this study raises that can be addressed is the lack of mentoring and support for potential preservice teachers during the first steps of their path into a teacher education program. The basic skills test is taken *before* a student enters a teacher education program, and thus, as with Park University, many teacher educators either are not aware of or do not have the opportunity to work with these students. The school or university can resolve this issue by providing more intensive institutional support, such as test preparation seminars or study groups, during the program entry process. Another issue that this study raises is the impact of financial stress on students' ability to take or retake the exams. This, too, is an issue that institutions can address through need-based scholarships for exams.

Through this study, we learned that institutions affect the culture of preparation and study through the expectations and opportunities provided for students to study for the exam. Furthermore, we learned that the opportunities that institu-

tions provide to students for group study can promote strong ties and networking among the participants. We posit that participants in such groups would benefit from explicit conversations about whom to seek out for support and the types or areas of support they need in addition to academic study support.

Finally, we believe that teacher educators and institutions can work on multiple levels to address the faults of the current teacher licensure exam system in the United States. In addition to providing timely support for potential students, teacher educators (in their roles as scholars) can collect and share stories such as the ones in this study to provide further data on the impact of testing on teacher preparation. Also, more research into alternative approaches to preservice teacher evaluation and licensing procedures (e.g., site-based qualitative assessments, which are the norm from an international perspective) could provide more effective and equitable models for cultivating a diverse and high-quality teacher workforce.

Notes

[1] In this article, we refer to program entry and completion exams for teacher certification under the broad umbrella term of licensure exam. Our study focused on the U.S. program entry exam, which is a basic skills exam. This exam is considered the first step in the exam process toward teacher licensure.

[2] Participant demographics were self-reported through our sociometric survey.

[3] There was also a statistically significant negative correlation between network racial diversity and exam success; however, this correlation disappeared when we controlled for race.

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Beyond the Criteria:
Evidence of Teacher Learning
in a Performance Assessment

**By Anissa R. Stewart, Jennifer N. Scalzo,
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Research on university-based teacher preparation has been routinely scrutinized. Current criticisms by policy makers and scholars are focused on the need for empirically based evidence on if and how teacher preparation matters (e.g., Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Darling-Hammond, 2008; National Research Council [NRC], 2010). One of the strongest sources of evidence comes from the report *Studying Teacher Education: The Report of the AERA Panel on Research and Teacher Education* (Cochran-Smith & Zeichner, 2005), which clearly illustrates that teacher education programs influence preservice teachers' thinking about teaching and learning, self-awareness, and beliefs and attitudes (see also Clift & Brady, 2005; Hollins & Guzman, 2005). Further evidence exists on the positive effects of assessments in university teacher education programs (e.g., Bunch, Aguirre, & Téllez, 2009; Darling-Hammond & Snyder, 2000; Nagle, 2009; Snyder, Lippincott, & Bower, 1998), but lack of consistent evidence threatens the

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sustained belief that teacher education programs enhance teacher effectiveness (Grossman, 2008).

Although teacher preparation programs are required to show evidence of preservice candidates' teaching ability, most assessments have been in the form of subject matter tests (Cochran-Smith, 2006); many states use one or more of the Educational Testing Service's (ETS) Praxis series tests. Nevertheless, research indicates a weak correlation between these tests of content knowledge and teacher effectiveness (Darling-Hammond, 2006; K. J. Mitchell, Robinson, Plake, & Knowles, 2001; NRC, 2001). As Darling-Hammond (2010) argued, "current measures for evaluating teachers are not often linked to their capacity to teach" (p. 2).

Even U.S. Secretary of Education Arne Duncan (2009) underscored the need for better assessments of the pedagogical skills of new teachers when he identified the efforts of the American Association of Colleges for Teacher Education (AACTE) and its 800 colleges and universities to improve student learning through developing a national assessment of teacher candidate readiness, a performance-based assessment modeled after the Performance Assessment for California Teachers (PACT). The PACT, a teaching performance assessment, is designed to measure effective teaching through assessing five domains (with rubrics covering Assessment, Reflection, Academic Language, Planning, and Instruction). The current performance assessment, endorsed by the AACTE and the Teacher Performance Assessment Consortium (TPAC), is known as the edTPA and comprises 33 states and the District of Columbia.[1]

Purpose of the Study

The purpose of this study was to examine what teacher candidates made visible about their practices and understandings of the teaching and learning process in constructing their performance assessments. This study was designed to examine the kinds of teaching practices teacher candidates utilized in the classroom, specifically examining how candidates who scored highest on certain PACT rubrics (in the domains of Assessment, Reflection, and Academic Language) planned instructional supports, assessed, and reflected in ways significantly different than those who scored lowest on PACT rubrics. For this study, we examined 12 performance assessments completed by preservice teachers from a Central Coast California Teacher Education Program. Although various types of assessments are required during this program, PACT offers the most comprehensive evidence of how teacher candidates engage in the practice of teaching and learning after having participated in variety of teacher preparation courses and while completing their fieldwork.

As of July 1, 2008, all candidates admitted to a credential program in California are required to pass a teacher performance assessment (TPA). PACT is an approved TPA, along with edTPA and two others. PACT is subject specific and is "designed to measure and promote candidates' abilities to integrate their knowledge of content, students, and instructional context in making instructional decisions and

reflecting on practice" (Pecheone & Chung, 2007, p. 5). To complete one of the PACT Teacher Events, candidates must submit teacher artifacts and commentaries centered on the five dimensions of teaching: planning, instruction, assessment, reflection, and academic language. Artifacts for the first four dimensions include lesson plans, video clips of teaching, student work samples, and daily reflections on instruction. Academic language is examined through these artifacts and candidates' commentary responses and evaluates "how their lessons and instruction help to build students' acquisition and development of academic language" (Pecheone & Chung, 2007, p. 10), including the vocabulary, symbols, and language demand central to the learning segment.

In this study, two phases of analysis were conducted. The first phase was a discourse analysis that focused on how teacher candidates who scored highest on the performance assessment described their teaching and students' learning in ways that were clearly different than the ways those candidates who scored lowest on the assessment learned. In this phase, we constructed telling cases, a means by which the teacher candidates' discursive choices become descriptions of formerly invisible social conditions (see J. C. Mitchell, 1984). These telling cases support our grounded inferences of how different candidates engaged in and reflected on their teaching and learning practices. In the second phase, we focused more on assessments of candidates who scored highest on the PACT to highlight differences in practices related to academic language development across disciplines. Through these phases of analysis, we addressed the following research questions:

1. What kinds of teaching practices did teacher candidates who scored highest on the Assessment, Reflection, and Academic Language rubrics use? How were these practices or strategies different from the practices or strategies those candidates who scored lowest on the same rubrics used?

2. Are these differences evident across teaching practices for different subject areas?

In answering these research questions, we sought to highlight what distinguished a strong performance assessment from a weaker one, based on scores for the Assessment, Reflection, and Academic Language rubrics. We focused on scores for these rubrics because our candidates consistently receive higher scores in the Planning and Instruction rubrics. We conducted this analysis specifically to inform the design of our own courses here at the university and to better support our teacher candidates going through the performance assessment process. An additional aim of this study is to inform a larger audience of teacher educators utilizing performance assessments to measure teacher candidate learning. As teacher educators and trained PACT scorers at our universities, we drew in this research and subsequent analysis from a number of experiences in working with teacher candidates, including performance assessment and master's project coordinators

and instructors for courses on curriculum design and instruction, English language development and specially designed academic instruction in English, educational psychology, literacy courses, and science methods.

The Performance Assessment for California Teachers

The PACT is a standardized performance assessment that includes Embedded Signature Assignments that vary among institutions.[2] PACT was developed to assess a teacher candidate's ability to plan lessons that provide opportunities for students to learn, design, and analyze assessments; to reflect on what occurred during and as a result of the instruction; and to propose next steps for the students' learning processes.

In the assessment, teacher candidates are required to consider the classroom context in which they are teaching and to plan lessons that are appropriate for their group of students. They also are prompted to provide specific support for English language learners, students with Individualized Education Programs (IEPs) or 504 Plans, or students who may struggle with content. These various documents, descriptions, and explanations are organized into a Teaching Event (TE). The TE comprises five tasks: Task 1 includes the Context for Learning Form and Context Commentary; Task 2 includes lesson plans, instructional materials, and Planning Commentary; Task 3 includes the video of classroom teaching and Instruction Commentary; Task 4 includes the assessment rubric, three student work samples, and the Assessment Commentary; and Task 5 includes daily reflections and the Reflection Commentary. Evidence of attention to academic language development is embedded across each of the tasks.

Trained and calibrated scorers evaluate the candidates' performances; these scorers are mostly faculty and supervisors within their own teacher education programs. Scorers evaluate the PACT TE using 12 four-level rubrics divided by task (Table 1). To pass the TE, a teacher candidate must achieve at least a Level 2 on 10 of the 12 rubrics and not receive two scores of Level 1 within the same task.[3] When a candidate passes PACT, he or she is deemed ready to take over his or her own classroom. Although our data derive solely from the PACT TE, we argue that the findings discussed in this study have implications for any university-based teacher education program that uses or plans to use performance assessments to evaluate teacher candidates' knowledge about teaching and learning.

A Conceptual Framework for Studying Teacher Learning

We understand teacher learning to be a continual process of socially constructed and reconstructed teaching and learning experiences. Two bodies of research inform our view of teacher learning and subsequent study of performance assessments: (a) teacher capacity, or what teachers should know and demonstrate as effective

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Table 1
Task Name, Rubric Numbers, and Guiding Questions for the PACT Rubrics

Task	Rubric	Guiding Questions
Planning	1	How do the plans support student learning of strategies for understanding, interpreting, and responding to complex text? (TPEs 1, 4, 9)
	2	How do the plans make the curriculum accessible to the students in the class? (TPEs 1, 4, 5, 6, 7, 8, 9)
	3	What opportunities do students have to demonstrate their understanding of the standards and learning objectives? (TPEs 1, 5, 11)
Instruction	4	How does the candidate actively engage students in their own understanding of how to understand, interpret, or respond to a complex text? (TPEs 1, 5, 11)
	5	How does the candidate monitor student learning during instruction and respond to student questions, comments, and needs? (TPEs 2, 5)
Assessment	6	How does the candidate demonstrate an understanding of student performance with respect to standards/ objectives? (TPEs 1, 3)
	7	How does the candidate use the analysis of student learning to propose next steps in instruction? (TPEs 3, 4)
	8	What is the quality of feedback to students? (TPEs 3, 4)
Reflection	9	How does the candidate monitor student learning and make appropriate adjustments in instruction during the learning segment? (TPEs 2, 10, 12, 13)
	10	How does the candidate use research, theory, and reflections on teaching and learning to guide practice? (TPEs 10, 11, 12, 13)
Academic Language	11	How does the candidate describe the language demands of the learning tasks and assessments in relation to students at different levels of English language proficiency? (TPEs 1, 4, 7, 8)
	12	How do the candidate's planning, instruction, and assessment support academic language development? (TPEs 1, 4, 7, 8)

teaching, including support for students' academic language development, and (b) performance assessments and what they reveal about candidates' teaching practices and understanding of their practices.

Teacher Capacity

Grant (2008) defined *teacher capacity* as "a teacher's knowledge, skills and dispositions" (p. 127). McDiarmid and Clevenger-Bright (2008) discussed the evolving and expanding conceptions of teacher capacity, drawing attention to the role of teachers' subject matter knowledge and responsibilities for providing access to all students. These conceptions of teacher capacity have advanced from a skill-focused view or "old formula of knowledge, skills, and dispositions" to include a more collaborative framing of circumstances, events, and problems teachers encounter (p. 147). Feiman-Nemser (2001) argued that central to continuation of this teacher learning process are five tasks that build on ideas about what teachers need to know and be able to do. To not confuse tasks as outlined in PACT with Feiman-Nemser's tasks, we refer to the latter as practices in describing her framework. Practices most significant to this study include Practice 3, introducing perspectives on development and learning to "provide necessary frameworks for understanding students, designing appropriate learning activities, and justifying pedagogical decisions and actions" (p. 1018), and Practice 5, providing teacher candidates with opportunities to observe, interpret, and analyze, as with "analyzing student work, comparing different curricular materials, . . . and observing what impact their instruction has on students" (p. 1019). Building on the significance of teacher learning, Cochran-Smith (2005) argued that the most defining goal of teacher education should be a focus on student learning. Furthermore, Darling-Hammond (2006) argued that the most important questions for teacher educators concern the relation between what teachers have learned and how it influences what their pupils learn.

The National Academy of Education Committee on Teacher Education (NAECTE; 2007) described effective teachers as those who use a variety of different tools to assess how students learn in addition to what students know. Effective teachers design lessons based on students' prior knowledge and level of development and adapt the curriculum to students' needs. They also engage students in active learning (as with debating, discussing, researching, experimenting, etc.). Aside from defining an effective teacher, the authors of NAECTE also explain that teacher education programs should be structured in ways that enable candidates to learn about practice in practice, by bridging learning experiences on campus to those taking place in the school classroom, to lay a foundation for lifelong learning. In other words, teacher research and performance assessments should relate teacher learning to classroom practice (see also Darling-Hammond, 2000, 2010) and should help candidates develop habits of reflection and analysis, which may be utilized once they have completed a particular preservice program (NAECTE, 2007). Specific characteristics that define teacher capacity and teacher effectiveness

are related to teacher candidates' abilities to understand their students, design appropriate learning activities, justify pedagogical decisions (Feiman-Nemser, 2001), and adapt the curriculum to students' needs (NAECTE, 2007). Building on these characteristics and others, we argue that central to a teacher candidate's success in the classroom is his or her ability to provide students with opportunities to develop the academic language in the specific discipline.

The academic language framework used in our teacher education program at the time these assessments were completed centered on the work of Dutro and Moran (2003). Dutro and Moran included a simplified description of academic language as the "language of texts, of academic discussion, and of formal writing" (p. 231). These may include justifying evidence, generating hypotheses, summarizing, evaluating information, defining causal relationships, and comparing and synthesizing information (see Chamot & O'Malley, 1994; Dutro & Moran, 2003). Academic language includes how (*forms*) we use language to accomplish academic purposes (*functions*) inside and outside of the classroom. Language *functions* are expressed through *forms*. Forms can include discipline-specific content vocabulary, which may take on different meanings depending on the discipline. Dutro and Moran (2003) distinguished between two different but interrelated types of forms. Using an architectural metaphor, they defined content-specific vocabulary terms as "brick terms" and the linguistic or grammatical structures that show relationships among words as the "mortar" terms. The brick and mortar terms and phrases work in tandem to express ideas.

Current research has indicated that teacher candidates are able to apply language objectives, functions, and language structures to their lesson plans (Scalzo, 2010) and that they are able to articulate different levels of understanding and advocate for a variety of instructional supports for English learners (Bunch et al., 2009). Furthermore, students can use academic language in the classroom, but only when instructional support is provided (Fillmore & Snow, 2002; Schleppegrell, 2004). However, as Grant (2008) argued, absent from much of the scholarship on teacher capacity is research on how teacher capacity relates to knowledge and skills for teaching diverse groups of students. Nevertheless, Dutro and Moran's (2003) approach takes a structural view of language, and no evidence exists that students studying explicit forms develop language fluency (see Valdés, Capitelli, & Alvarez, 2011). As such, we are exploring more recent and sophisticated approaches to studying academic language development in our work with preservice teachers (see, e.g., Bailey, 2007; Bailey & Butler, 2003; Bunch, 2013; Arias & Faltis, 2013). These include opportunities for teachers to develop pedagogical language knowledge (Galguera, 2011); to facilitate students' academic language development within the fabric of everyday classroom interactions, not separated from social language (Faltis, 2013); and to develop academic language proficiency tests to better understand language usage in academic settings (Bailey, 2007; Bailey & Butler, 2003). Specific approaches to students' development of academic language as a social

practice are defined in terms of "learning to talk science" (Lemke, 1990) and using language recognized by social scientists (Short, 1994), or what De Oliveira (2013) called *history discourse*, including presenting and interpreting historical events (Schleppegrell, 2004). In the field of mathematics, students use structures as well as language in developing a *mathematics register* (Middleton, Llamas-Flores, & Guerra-Lombardi, 2013). Educators have also used *systemic functional linguistics* to understand the importance of language forms for meaning making (Halliday, 1985; Halliday & Webster, 2004). In particular, according to Faltis (2013),

> if teachers could learn about language formations within different academic disciplines and teach students to recognize and use these patterns, students would have more access to the academic content because the features of language in academic contexts would become transparent. (p. 20)

Performance Assessments

Performance assessments are used for a variety of reasons and have been identified as a valuable tool for evaluating teacher preparation (Darling-Hammond, 2010). By utilizing performance assessments, educators can be more flexible in how they design and implement their teacher education programs. Furthermore, performance assessments most closely align with evaluating what teachers actually do (Arends, 2006; Darling-Hammond, 2010). Context is important—just as with students at any level, "the learning varies with individual learners and their aspirations and abilities" (Arends, 2006, p. 20). Self-reported data by teachers who found completing the PACT to be valuable indicated that the assessment was helpful for sequencing lessons, evaluating what students were learning (and not learning), and reflecting on how to use that understanding to prepare for the next lesson. Teachers reported that completing this assessment continued to influence their teaching practices during their first year of teaching (Darling-Hammond, 2010).

Research on what performance assessments make visible about effective teaching indicates that candidates use multiple representations to make language and mathematical concepts comprehensible, they promote and facilitate the use of mathematical vocabulary and discourse, they used a variety of participation structures, and they supported the use of students' native languages (Bunch et al., 2009). Although this study examined how the teacher candidates designed and implemented their lessons, other researchers have focused on the reflection task and have found that candidates made "a shift from inner reflection to a more critically reflective practice grounded on the examination of artifacts and reasoned discourse about such inquiry" (Nagle, 2009, p. 4). This process moved the discourse away from what Nagle called "war stories" or other personal stories toward more analytical and productive conversations about teaching practices. Teacher candidates also integrate aspects of these conversations into their work and create an expectation that reflective practice is part of everyday teaching practice.

Methodology and Data Collection

For this article, we qualitatively analyzed 12 performance assessments submitted by teacher candidates who were part of the secondary teaching cohort in the 2009-2010 academic school year. Table 2 charts the sum of each candidate's scores. So that pseudonyms are easy to distinguish, we used names that start with the letter H to represent candidates that received the "highest" set of scores. Names that start with L were chosen to represent candidates that received the "lowest" set of scores, and names that started with the letter N were chosen to represent candidates that received the "next lowest" set of scores. As represented in Table 2, candidates who received the highest scores earned between 20 and 25. Because there are seven rubrics, the teacher candidates who submitted strong assessments received, on average, a score of Level 3 for each rubric. Teacher candidates with the lowest scores received a total between 11 and 15, an average at or below a Level 2 on each of the seven rubrics. Nevertheless, all of the performance assessments we analyzed received passing scores (see section "The Performance Assessment for California Teachers" for the California passing standard).

After selecting the assessments we wanted to examine further, we read through the performance assessments and highlighted key characteristics and practices associated with effective teaching (see Darling-Hammond, 2000; Feiman-Nemser, 2001; NAECTE, 2007). Specifically, we coded the candidates' discursive choices about the pedagogical skills they incorporated into their lessons, how they monitored student learning, how they interpreted and used assessments, how they made content accessible, and how they scaffolded for English learners (ELs) and others they identified as struggling with the content. After coding the teacher candidates' descriptions, we charted them by task (Assessment, Academic Language, or Reflection) and then analyzed the charts to tease out patterns of differences between

Table 2
Highest and Lowest Set of Total Scores for Rubrics 6-12

	Subject area	*Sum of scores for Rubrics 6-12*
Holly	Science	23
Nancy	Science	14
Laura	Science	13
Hannah	Mathematics	25
Norah	Mathematics	15
Lucy	Mathematics	11
Heather	English language arts	20
Nikki	English language arts	14
Larry	English language arts	13
Henry	History/social science	21
Nadia	History/social science	14
Luke	History/social science	13

the strong and weak performance assessments for each subject and, subsequently, looked for evidence of these patterns across the TEs in the four different subject areas. During this analysis, we found five differences in how teacher candidates planned, assessed, and reflected on their teaching in the "strong" versus "weak/poor" performance assessments.

On the basis of these findings, we constructed telling cases (see J. C. Mitchell, 1984) of those five differences, which make transparent strong practices versus weaker practices in relation to characteristics of effective teaching. These telling cases make visible the spectrum of understandings constructed from the ideal or planned opportunities, as available through participation in the teacher education program, to the more situational opportunities made available in the different classroom contexts and through the feedback provided by the different school supervisors, among others. During the analytic process, we make visible how teacher candidates' actions and discursive choices are representative of teachers who either scored highest or scored lowest or next lowest on the PACT. In the second phase of analysis, we contrasted teaching practices of those who scored highest, specifically looking at how candidates engaged students in academic language opportunities to determine if differences across disciplines were evident.

Findings

Comparison of Teaching Practices

Table 3 presents the breakdown of the different class contexts, as described in the performance assessments we analyzed, according to grade level, subject area, number of students in the class, and number of students who were designated EL and who had IEPs or 504 Plans. From Table 3, it is important to note that these class contexts represent a range of grade levels and subject areas, and all classes had at least one student who was designated EL according to his or her performance on the California English Language Development Test. Furthermore, students in these classes represent a diverse population of students, both linguistically and culturally, and thus a rich source of data collection and complex learning environments.

Key teaching actions. Through analysis of the performance assessment documents, we found five key teaching actions that distinguished a strong TE from one that received the lowest or next lowest set of passing scores. Findings from this phase of analysis are as follows:

1. Teacher candidates who did well on the PACT used formative assessments to *monitor students' understanding toward meeting the standards and learning objectives* (see Practice 3 in Feiman-Nemser, 2001) *and language objectives*; whereas teacher candidates who did not do as well used formative assessments to *determine if students were on task* or to *monitor behavior*.

2. Teacher candidates who did well on PACT used assessment criteria that *focused on content and language objectives* (see Practice 5 in Feiman-Nemser, 2001), whereas teacher candidates who did not do as well *focused primarily on completion of the task and the grammatical or mechanical elements of writing*.

3. Teacher candidates who did well on PACT utilized scaffolding that *supported students' ability to build academic language fluency* (see Practice 5 in Feiman-Nemser, 2001), whereas teacher candidates who did not do as well often planned supports that *constrained what the students were able to discuss in their assignments*.

4. Teacher candidates who did well on PACT *provided different types of support for academic language development* and were *able to articulate why these strategies are likely to support the development of the students' understandings* of the course content (see Practice 3 in Feiman-Nemser, 2001), whereas the teacher candidates who did not do as well planned

Table 3
Breakdown of Class Contexts for Each Teaching Event Analyzed

	Science			Math		English language arts		History/social science				
	Holly	Nancy	Laura	Hannah	Norah	Lucy	Heather	Nikki	Larry	Henry	Nadia	Luke
Grade[a]	8	8	7	9 (22), 10 (5), 11 (1)	10 (1), 11 (24), 12 (5)	8	11 (28), 12 (2)	8	9	11	12	7
Subject area[b]	CP phys.	phs. sci.	Gate life sci.	CP geom.	pre-calc	alg. 2	English/ Am. lit.	CP Engl.	CP Engl.	CP U.S. hist.	CP econ.	CP world hist.
Focus of lessons	how forces contribute to velocity	stars and planets	struc./function of DNA	polygons/parallelograms	combining functions	slope as repre-. sentation of rate	editorials	poetry interpretation	dialogue	minorities and WWII	circular flow and macro-economics	justice and feudal life
No. students	32	27	28	28	30	29	30	29	24	34	34	32
No. designated ELs[c]	6 RF; 12 LP	1 AD; 13 RF	1 AD; 7 RF	1 AD; 4 RF	8 RF; 5 LP	3 AD; 1 EA	8 EL; 9 RF	7 AD; 5 EA	10 IA; 2 RF	5 AD; 2 IA	6 RF; 12 LP	9 AD; 3 EA
No. IEPs or 504 Plans	N/A	1 with IEP	1 w/ 504 1 w/ IEP	N/A	N/A	2 with 504	1 w/ 504 4 w/ IEPs	1 w/ IEP	N/A	7 w/ 504 1 w/ IEP	8 w/ IEPs	N/A
IEP	–	1	1	–	–	0	4	1	–	1	8	–
504	–	0	1	–	–	2	1	0	–	7	0	–

[a] CP = college preparatory.
[b] For multiple grades, number of students per grade in parentheses.
[c] EL = English learner; RF = reclassified fluent; LP = limited proficiency; AD = advanced; EA = early advanced;
IA = intermediate advanced. Information provided is based the California English Language Development Test.

support that *focused on pronunciation and repetition of words and/or definitions*.

5. Teacher candidates who did well on PACT *discussed next steps that focused on reteaching, review, and using different strategies and/or assessments* (see Practice 5 in Feiman-Nemser, 2001), whereas the teacher candidates who did not do as well *reiterated what they already did or explained that they would spend more time presenting information in essentially the same way*.

On the basis of these findings, we shifted our analysis to constructing telling cases to further illustrate these differences. In constructing these telling cases, we described the differences in more detail and highlighted the discursive choices made by teacher candidates who earned higher scores on the PACT versus by those who scored lowest and next lowest on the PACT.

Use of formative assessments. Each of the 12 teacher candidates used the term *formative assessment* throughout his or her lesson plan. The teachers also addressed how they used formative assessments as prompted by a question in the Planning Commentary, which asks, "Explain how the collection of assessments from your plan allows you to evaluate your students' learning of specific student standards/objectives and provide feedback to students on their learning." Candidates who scored highest on PACT used a variety of different types of formative assessments, including a preassessment that informed the design of their lessons, an observation checklist or a description of how the candidate would circulate the room and ask specific questions to check for understanding, and strategies for requiring students to explain their answers. For example, Holly's students completed a vocabulary preassessment that required them to write definitions and draw pictures of science concepts. She used this preassessment to determine if and how students understood the concepts before she began her new unit. In addition, Heather preassessed her students' academic language development, reading comprehension, and writing skills by having them analyze a political cartoon (before moving to more complex editorials), and Hannah preassessed her students' ability to identify polygons and describe in writing why a particular shape was considered a polygon or not. Henry had his students complete a K-W-L chart to determine what they "knew" and what they "wanted to know" about the study of minorities during World War II (what students "learned" would be assessed at the end of the unit). Conversely, only one of the other eight teacher candidates (who scored lowest or next lowest) stated that she used a preassessment. Laura mentioned that she gave a pretest but provided no explanation of what she required students to do and what she wanted to know about the students' prior understanding before planning her lessons.

In addition, all of the 12 candidates stated that they would circulate the classroom during instructional time and/or would ask questions during the lessons as

part of formative assessments. Candidates who scored highest provided examples of the specific questions they planned to ask. For example, on Day 5, Hannah explains that she will be walking around the classroom observing students' work and looking for specific evidence of understanding:

> I will be looking for correct answers as indications that they [the students] are applying the properties of parallelograms. I also will be looking to see if students are labeling the parallelograms using the properties of the parallelograms. If students are writing incorrect measurements, I will know they require additional instruction with applying the properties of a parallelogram.

Hannah describes questioning strategies she will incorporate to make visible students' understanding, but also to extend their understanding of the concepts. On Day 2 of her lesson plans, she states,

> I will ask them to identify polygons and then follow their statements with "why" questions to dig into their thinking. I anticipate students will have questions about the concepts of irregular, regular, and specific names for polygons. I plan to address these questions during a PowerPoint presentation [of different photo examples of polygons in sporting, travel, recreation, and home contexts] and as they arise during class. During the angle sums investigation, I will be asking students to respond to "why did you draw the triangles that way," "how many triangles are there," and "what would the sum be if . . ." to assess their knowledge of interior angle sums and progress toward the content standard and cognitive objectives for this lesson.

Based on these excerpts, it is clear Hannah was monitoring students' understandings by looking at how they engaged in the math activities. She was looking to see if students were labeling and measuring the shapes correctly but was also asking students open-ended questions that required them to discuss how and why they were approaching the assignments or questions in certain ways.

Other teacher candidates who scored lowest and next lowest also stated that they would be circulating the room during instructional time, but they described this formative assessment process as a way to monitor if students were "on task." For example, Laura explained that she would assess students on their ability to work in groups and the amount of input from each student. Nancy stated that she would circulate the room giving "tickets" to students who were participating, a reward they could exchange for a prize later in the week. In addition, Lucy states she would ask students questions "to check understanding of previously covered topics" and "to see how each group is doing," but she does not describe the strategies she might use or the specific questions she would ask. Interestingly, however, she explains the importance of positive feedback during her daily formative assessments. In every day of her lesson plans, she writes,

> Throughout all stages of the formative assessments, positive feedback will be critical. When students volunteer answers in class, they need to be encouraged and

praised. I also plan to make positive comments to the students who are working hard on the class work and are on the right track. The students who are struggling will need encouragement as well. Often they only need a small nudge to get them back on track, and it is helpful for them to see how close they already are.

Thus "working hard" and being "on the right track" indicate good behavior but also understanding of the material. Although providing positive feedback is important, it should not be the focus of the formative assessment description.

Assessment criteria. All 12 candidates provided a rubric or set of criteria they used to evaluate whether students met, did not meet, or exceeded the learning objectives. Differences between highest scoring and lowest scoring performance assessments illuminated differences in how criteria were measured and aligned with respect to the learning objectives and related standards. Candidates who scored highest detailed criteria for evaluating whether students properly used academic language (Hannah, Holly, Henry), were able to make strong claims and support those claims with evidence from the text (Heather, Henry), accurately represented the history of the time (Henry), and provided justification for their answers (Hannah, Heather, Holly). They also were able to explain how certain students demonstrated limited or partial understanding. Heather's lessons focused on the analysis of rhetorical devices, structure, and techniques by which authors and speakers convey meaning. In particular, she addressed standards on structural features of informational materials and expository critique. Heather's summative assessment criteria included (a) selecting an editorial cartoon or written editorial suitable for analysis; (b) understanding lesson concepts (persuasive techniques, rhetorical devices, point of view, strengths and weaknesses of arguments); and (c) structuring written responses. These criteria were based on a three-level scale, with a score of 1 for below standards, a 2 for meets standards, and a 3 for exceeds standards. Heather's specific criteria focused on whether the students were able to "identify a writer's stance," the "persuasive techniques that were used in the editorial," and if and "how students warranted their claims with evidence."

Teacher candidates who scored lowest or next lowest on the performance assessment rubrics listed criteria such as completion of the handouts (Norah, Laura, Lucy, Luke), length of writing assignments (Nikki, Larry, Luke), and whether answers were correct or not correct (Nadia, Norah, Nikki, Lucy, Laura, Luke). For example, Larry required students to create a dialogue about a particular experience they had had, and his four assessment criteria included (a) length of dialogue, (b) character traits, (c) character emotion, and (d) other information included.

Larry's criteria were based on a four-level scale. Although these levels were not labeled in the assessment documents, 1 typically denotes not meeting the standard and 4 is exceeding the standard, with scores of 2 and 3 meeting parts of the standards. To assess how students met each of these four criteria, Larry used quantitative measures for the first two criteria (length of dialogue and character traits). For

example, a Level 3 on the rubric was qualified as "the dialogue having 6-7 lines" (length) and "describing at least 1 character trait per character." The third criterion, character emotion, was measured explicitly by whether the student "identified character emotions through the use of tags, structure, and diction." Furthermore, when he discussed what he learned from analyzing students' assessments (a prompt in the Assessment Commentary), he explained that some of the students "did not meet his expectations and did not punctuate their dialogue correctly" or "did not write text that conveyed emotion" but were able to "show traits of the characters in their dialogue." Larry never explained how some students were able or not able to write text that conveyed emotion or that illustrated character traits.

Academic language framework. All candidates used a functional approach to academic language through the use of functions, forms, and fluency as discussed in Dutro and Moran (2003), but how they employed this approach and what they sought to accomplish differed. Each candidate listed key vocabulary students needed to know to demonstrate their understanding. One candidate, Nancy, actually differentiated between "brick" and "mortar" terms. Eleven out of the 12 candidates identified language demands, such as describe, explain, convert, summarize, and ask/answer clarifying questions, among others. The only candidate who did not identify a language demand was Lucy.

Most teacher candidates used sentence frames to support students' ability to build academic language fluency. Nine out of 12 candidates listed at least one sentence frame that students could use to construct arguments and/or provide explanations for what they understood about the content. Through our contrastive analysis, we found clear difference between how the candidates constructed the sentence frames. For example, Larry, Luke, Nancy, and Nikki provided sentence frames that were more like fill-in-the-blank sentences, which constrained what students could say or write and thus how the students could explain their understanding. Nancy listed her sentence frame as follows: "The structure of DNA is a _____ _____, which is shaped like a _____ _____." To address the blanks in this sentence, students needed to determine what two words fit into those two sets of blanks rather than being able to explain what DNA is. Conversely, Norah, Hannah, Heather, Holly, and Henry used sentence frames that required students to include brick terms or proper nouns but also to provide evidence to explain their understanding of the content. For example, Henry incorporated the following sentence frame: "While all minorities experienced a level of discrimination, I think that _____ suffered the most on the home front during WWII because of _____ and _____."

In this example, the sentence frame allowed students to craft a thesis statement, which they subsequently developed in their essays. This type of support encouraged students to decide and articulate which of three given minority groups (Mexican American, Japanese American, and African American) suffered the most discrimination during World War II and then justify their responses with evidence.

Luke introduced a paragraph frame that essentially provided the entire structure of the written assessment. By discussing "Wilma's" treatment, Luke provided a sample paragraph for the students to follow when crafting their essays and justifying their claims:

> I think Wilma would have received just treatment if the . . . [choose Henry II reforms or Magna Carta] has been in effect. First, she would have received [first piece of evidence] in order to counter the injustice of. . . . Second she would have received [second piece of evidence] in order to counter the injustice of. . . . I believe that if Wilma had lived during the [Reforms of Henry II or the signing of the Magna Carta—choose one] she would have received better treatment based on the evidence that was presented.

This highly structured paragraph frame offers limited opportunities for students to express themselves. Although the candidate's goal was to provide scaffolding, this support was oriented toward a fill-in-the-blank assignment. Students were asked to choose which one, Henry II's reforms or the Magna Carta, would have enabled just treatment of a particular case. This type of support does not require students to understand the laws and apply the information but rather essentially to include one of the laws that would have changed the outcome of the case. Luke did require students to justify their claims with specific evidence. In looking more closely at what the candidate was asking students to do, what becomes visible is how the candidate asked them to choose a specific law that would have changed "X" injustice. Here students needed to understand the injustice and apply which law could have changed the outcome of that injustice. This did require students to examine the laws and apply them to specific cases. Again, the closing sentence in the frame offered only two choices (Magna Carta or Henry II's reforms). This explanation is not a critique of using paragraph frames but rather is an example of how the frame can potentially constrain what can be stated. Furthermore, all candidates who scored highest on the PACT rubrics discussed the use of sentence frames as an "option" for students, whereas candidates who scored lowest and next lowest discussed sentence frames as a requirement for participation in the lessons.

Supports for developing academic language. In addition to the sentence frame, teacher candidates used a variety of other types of support for students' academic language development. Some teacher candidates modeled for their students how to engage with content. Others provided students with graphic organizers. A number of the candidates provided opportunities for students to share answers with partners or in small groups as a way for students to practice explaining, describing, and/or summarizing to a peer or peers, before doing so in front of the whole class. For example, Holly included a think/pair/share activity in her lesson plan on Day 1 and stated,

> I ask students to think of two more examples of forces on their own [after she provides an example] and then share their ideas with a partner—why?—to lower

the affective filter before I call on them individually to answer the question. It also provides the opportunity for two-way interactions, which supports the need for my EL to build language proficiency.

In addition to building language proficiency, Holly also explained in her Planning Commentary,

To give my students real hands-on experience with forces, one of the learning tasks involves students working in pairs to build a house of cards. During this time they will see forces in action. To move beyond simply identifying forces and to develop their academic language, students are required to write a paragraph about their experience building a house of cards. They are given key vocabulary words that they must include in their paragraph to explain the forces that are involved in constructing and destroying the structure.

Not only did Holly use different strategies to support her students' academic language development, she articulated why the strategies most likely would support her students. Nancy referenced academic language support in this way:

Academic language is addressed primarily through repetition of terms. Students are unsure of pronunciation at first, but with repeated practice (I have the students repeat after me) they incorporate the new language.

What is interesting about this example is that Nancy had language objectives that required students to list, name, predict, and summarize, but then she discussed how students would develop academic language proficiency by repeating terms. Nancy was not the only candidate to mention the need for students to repeat terms and definitions as a way to build academic language fluency. In fact, all candidates who scored lowest and next lowest described the need for students to hear the academic language terms and to repeat the terms and/or definitions multiple times, but not necessarily in a sentence form or in the context of the particular lesson.

Adjustments to instruction. The final difference concerns how teacher candidates planned for next steps, as made visible in the Reflection Commentary. Candidates who scored highest on the PACT discussed next steps that described reteaching the lesson using different strategies and/or assessments. Thus the focus was on helping to facilitate their students' understanding. Candidates who scored lowest and next lowest reiterated what they did in the lessons and/or described next steps for teaching in essentially the same ways as before. For example, Hannah explains her next steps in this way:

In my plans for this learning segment, I would do several things differently. During the constructions lab in Lesson 1, I would have planned to go through the final three tasks with the students in more guided exploration. I feel that doing so would have supported both EL and English-only students since the majority of students had trouble reading and following the written instructions on their own. . . . The second thing I would have planned to do differently is to give students different-

sized parallelograms during the exploration of the properties of parallelograms in Lesson 3. I feel that this would have supported the idea that the properties work for all the parallelograms and not just a certain parallelogram for all students.

In this excerpt, Hannah describes the need for more guided exploration and giving students different sized shapes so they could make larger connections about properties of parallelograms. Henry discussed the need for students to have a graphic organizer that could be used to improve students' historical analysis and writing skills. Holly talked about using different assessments or incorporating more open-ended questions into the assessments so that students would be able to explain how they know the answer or concept. Heather described the need for her first lesson to have a different political cartoon that was more accessible to the students and having directions in written form, not just in oral form, so that students could better understand the steps for analyzing cartoons and editorials. Conversely, Lucy explained her adjustments this way:

If I could go back and teach this learning segment again, I would want to go back one more day before Day 1. I think the fact that we started the segment late threw things off for the rest of the week. Because I was not able to thoroughly explain the homework assignment that was due on Day 1, we ended up spending a lot of time going over it, and getting behind schedule. This left less time over the next 3 days for the students to work on the assigned problems.

Although Lucy discussed issues of time management, her plan to adjust instruction focuses on explanation of the homework that was assigned before her lesson segment took place. Instead, she should have explained what students learned or did not learn from her lessons and how she could have made adjustments that provided more access to the content or better supported students' understanding of the concepts.

Differences Across Discipline

In the second phase of analysis, we shifted focus to only those who earned the highest scores in Assessment, Reflection, and Academic Language to determine if there were differences across disciplines—whether the candidates utilized different teaching practices, including planning for students' use of discipline-recognized language in everyday classroom interactions and then assessment of language use in the context of structured academic activities.

Everyday classroom interactions. Everyday classroom interactions are defined as opportunities for students to engage socially while practicing academic language vocabulary in action. Across all disciplines, higher scoring teacher candidates required students to work in pairs or small groups to elicit prior knowledge on concepts (math and science) or primary sources (English Language Arts and History/Social Science), which often occurred at the beginning of a lesson or

unit. Students in Hannah's class shared prior knowledge of polygons, including characteristics of polygons they had identified from home (or somewhere outside the classroom), and then created a definition based on this discussion. Students in Holly's class worked in small groups to share their definitions of speed, velocity, and acceleration in one science lesson and then to share examples of forces with a partner in a subsequent lesson. Students in Henry's class partnered to analyze and discuss primary sources related to the challenges minorities experienced during World War II. These discussions were documented on a graphic organizer that was used when students drafted their "Minority Reports." Students in Heather's class completed a give one/get one handout related to the editorials they chose to analyze for homework. In addition, she had them share the findings from their completed handouts with peers, stating, "I know that a number of students in my class can argue. I also know that many of them have social, political, and legal issues that they have a strong stance on." This activity allowed students to share ideas with multiple partners in a more social context than would be found by debating as a whole class in a more academically structured context.

Academic language in context. Academic language in context can be defined by how students use language in ways that members of the discipline may use language. In other words, in the context of structured lessons, students practice "talking science" or "history discourse," similar to how professionals understand concepts and innovate in their fields. This practice looked very different across disciplines. Hannah's assessment required students to identify and define characteristics of polygons and solve for angles; her lessons also required students to justify their answers and/or explain their solutions. For example, to receive full credit on the summative assessment, students needed to justify whether a figure was a polygon and/or whether it was irregular. Therefore academic language use was found written on the handouts as explanations. Holly planned an inquiry-based lab in which students "engaged in the scientific process by planning and conducting an investigation to test a hypothesis," related to the amount of force on a Hershey's Kiss and how it affects the distance it travels. The candidate assessed students based on "spontaneously using multiple vocabulary words without prompting" and providing accurate definitions. She tracked this participation on a spreadsheet, while circulating the room. Henry defined his assessment as a "constructivist based inquiry . . . engaging the students in inquiries where they are 'doing history,' using their individual strengths and previous knowledge to comprehend the content matter. . . . They were building literacy skills to improve their content knowledge." The rubric he designed assessed students' use of vocabulary words and if they were used in the "correct context." Heather's lesson engaged students in a *Jigsaw* activity where students were assigned to read and analyze one of the editorials provided in a packet, becoming the *expert* on that particular editorial. In groups, students shared individual understandings of the editorial. Students were assessed based on their ability to identify the writer's stance and persuasive technique

to meet the standards, but could *exceed* the standards if he or she "backs up the claims with evidence from the editorial." So academic language use was assessed in writing assignments in the disciplines of math, history, and English language arts, but ELA students could earn a proficient score by choosing the right stance or technique (potentially understanding the definitions of the vocabulary) without having to cite evidence to support their choice. Academic language was assessed verbally, based on students' active participation in the science lab and on written work based on their definitions.

Systemic linguistic functions. Teacher candidates used a variety of different language forms as structures for students to make meaning (Halliday, 1985; Halliday & Webster, 2004). All the candidates introduced sentence frames for students to use to support their construction of thesis statements or other written work. The higher scoring candidates, however, went beyond these scaffolds to support students' learning in other ways. For example, Hannah encouraged manipulative use for construction of meaning by having students use different-sized parallelograms when exploring the properties of these geometric shapes. Students in Henry's class analyzed primary sources and were asked to document evidence drawn from them on a graphic organizer that focused on contrasting events and perspectives. Heather focused on structural features of informational materials and expository critique. Students were introduced to editorials and political cartoons, were required to analyze them, and were ultimately required to identify a persuasive technique being used that "is particularly strong" and then explain how this technique adds to the writer's or artist's argument (for exceeding proficiency). Holly used a variety of formative assessments and open-ended questions to promote meaning making throughout her unit; yet her summative assessment was based on students' recall of definitions and properties of forces. She required students to perform calculations, choose a type of force based on a diagram and "explain how you know," demanding a reiteration of the definition of forces as opposed to proving or disproving a hypothesis with evidence, which is more in line with what scientists do.

Discussion

Through examination of performance assessments, we found that candidates who scored highest on Assessment, Reflection, and Academic Language rubrics included clearly stated formative assessment criteria they used to monitor students' understandings of the content and detailed rubrics that described various levels of proficiency toward meeting the standards or objectives. They also incorporated an Academic Language framework throughout their lessons to support the academic language development of their students and were able to clearly explain why the particular strategies were likely to support their particular classroom context and student demographics. Finally, teacher candidates who submitted the strongest

assessments were able to discuss how they would plan to adjust instruction in the future, based on analysis of what occurred during instruction and of students' formative and summative assessments.

Candidates who scored lowest on those rubrics focused on student behavior and completion of assignments rather than on evidence of learning. These candidates also included what they considered support for developing academic language, but that "support" often constrained what students were able to discuss in their writing, and the support strategies focused mostly on repetition of words and definitions. Finally, those candidates who did not do as well on the performance assessments struggled with the ability to discuss the changes they needed to make to be more effective and reflective teachers, a necessary expectation for everyday teaching practice (Nagle, 2009).

Through closer examination, we found that higher scorers were able to teach beyond vocabulary and mechanics and promote genuine discourse in their discipline to some extent. All higher performing candidates focused on academic language development through student-driven discussions, typically at the beginning of the lessons, when students were pair-sharing or, as in the case of Holly's lessons, during the curling lab conversations. Each of these activities focused on the development of disciplinary knowledge and skills (e.g., forces in science; polygons in math; editorials in ELA; historical primary sources in HSS). These teacher candidates promoted academic language development in contexts recognized as appropriate by professionals in their disciplines. For example, in the science lesson, students engaged in inquiry practices related to forces; in math, students explored the properties of polygons using manipulatives; in ELA, students identified a writer's stance and persuasive technique through examining editorials; and in history, students constructed arguments based on the analysis of political cartoons and other primary source documents. In addition, all teacher candidates used language forms to assist students in understanding discipline-specific content knowledge, but not separated from social language (Faltis, 2013). Henry had students participate in history discourse as a *linguistically responsive* history teacher (De Oliveira, 2013) by making the content accessible to ELs, not by simplifying the texts, but by providing scaffolding strategies for students to make meaning of the text, document evidence, and construct an argument with support from the texts. Hannah facilitated students' use of mathematical vocabulary and discourse (Bunch et al., 2009), while supporting development of their *mathematical register* by requiring students to communicate the reasoning behind mathematical solutions (Garrison, Amaral, & Ponce, 2006; Middleton et al., 2013). Holly did not always use forms that reflected what members of the scientific community would use in their own occupations. For instance, she had her students answer open-ended questions in her summative assessment, but many scientists learn through collaboration with one another and/or from developing a hypothesis and testing it via an iterative process. In fact, there was a discrepancy between what some of the teacher candidates assessed at the end of

the unit and how they planned activities during the unit, which may have occurred because mentor teachers required teacher candidates use a particular summative assessment at the end of a unit.

Okhremtchouk, Seiki, Gilliland, Ateh, Wallace, and Kato (2009) explained the importance of examining "the effects of these assessments [PACT] on teacher candidates in order to further understand and shape programs that prepare candidates for such evaluations" (p. 40). We agree, but just collecting student perspectives is not enough. By analyzing the performance assessments and the candidates' discursive choices, we were able to examine how candidates inscribe their understandings of working with linguistically diverse students (Bunch et al., 2009) and also add to the findings of how teacher candidates are able to use and interpret assessments and reflect on their teaching practices to inform next steps in their instruction. One limitation to this study is the number of performance assessments that we examined. In future research, we will use these findings to analyze more assessments from different content areas, specifically to see if there is a greater influence of the new Common Core State Standards and Next Generation Standards on summative assessment choices.

Conclusion

Although teacher education still has its share of harsh critics, the shift toward solid empirical evidence supporting its effectiveness is growing (Cochran-Smith, 2005). Interviews and surveys of teacher education candidates may provide evidence as to changes in thinking, growth in understanding, and reflection. However, examining the performance assessments constructed by teacher candidates during and about their classroom experiences may offer clearer evidence of changes in their beliefs and understandings about the teaching and learning process in relation to the contexts in which they are working. The use of performance assessments in teacher education programs is not new, but research tends to focus on teacher candidates' *perceptions* of the assessments or the *process* of completing the assessments. This study adds much to the literature on what performance assessments make visible about whether teacher candidates can engage in effective teaching practices and what elements of the teacher education program design need to be further revised and/or developed to strengthen preservice candidates' ability to plan engaging and effective lessons.

We believe the implications of our study are manifold. By understanding what types of teaching practices are more effective than others and how teacher candidates inscribe their understandings of these practices, teacher educators are better able not only to assess teacher candidates but also to model and facilitate highly effective teaching practices. In fact, we argue that any educator responsible for evaluating teacher quality at the preservice level could benefit from these findings, including those who are teaching courses on instructional design, lesson planning, and as-

sessment and those who are supervising and giving feedback to teacher candidates during their fieldwork. Also, experienced teachers working toward national board certification could benefit, as the PACT is partly modeled on the national board of professional teaching standards.[4] In conclusion, while Arne Duncan has stressed the need for a national assessment of teacher candidate readiness and highlighted AACTE efforts with the edTPA, his recent call for the National Council on Teacher Quality (NCTQ) to rate institutions of teacher education has drawn intense criticism. As Linda Darling-Hammond (2013) explained, "NCTQ's methodology is a paper review of published course requirements and course syllabi against a check list that does not consider the actual quality of instruction that the programs offer, evidence of what their students learn, or whether graduates can actually teach." By assessing evidence of teacher learning and performance, one can look beyond the criteria, beyond what is outlined in a lesson plan or syllabus, and better recognize what teachers are understanding about the teaching and learning process, how students are engaging in lessons, and how teachers are determining what students are learning or not learning—evidence that ultimately can be used to improve teacher education programs and classroom learning.

Notes

[1] See http://edtpa.aacte.org/ for more information.

[2] For more information on PACT and its history and the other assessments, visit http://www.pacttpa.org/. See also Darling-Hammond (2010, Table 1) for more details on the dimensions of PACT.

[3] This represents the passing standard for PACT in California. See http://www.pacttpa.org/ for more clarification concerning this passing standard. Also, this does not represent the passing standard for those states implementing TPAC. Each state may set its own standard based on analysis of pilot data.

[4] For more information, visit http://www.nbpts.org/.

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Reading the World
While Learning to Teach:
Critical Perspectives on Literacy Methods

By Kathleen Riley & Katherine Crawford-Garrett

Since the *No Child Left Behind Act* (NCLB) was formally signed into law more than a decade ago, school reform efforts in the United States have been shaped by a neoliberal ideology that has exacted a tremendous toll on students, teachers, and teacher educators. Apple (2013) defined the neoliberal initiative as "a vision that sees every sector of society as subject to the logics of commodification, marketization, competition, and cost-benefit analysis" (p. 6). According to this definition, the reforms NCLB has perpetuated, including high-stakes accountability measures, a focus on privatization and corporatization, and the advent of alternative routes to teacher licensure, typify neoliberal approaches to school reform and suggest a large-scale, bipartisan disinvestment from public education. Although critiques of NCLB and other neoliberal reform efforts are pervasive (Sleeter, 2007; Zeichner, 2010), little has been written about those arguably most affected by these initiatives: preservice teachers just now entering college whose schooling was shaped by high-stakes accountability.

Because the majority of the preservice teachers currently entering the profession came of age during the era of NCLB, teacher education programs and instructors

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who take sociocritical perspectives face unique challenges. For example, as we built relationships with preservice teachers in our respective contexts, we began to notice how profoundly their perspectives on education, and reading instruction in particular, had been shaped by the neoliberal reform environment they experienced as elementary students. Thus, as we shared across our contexts and discussed our practice as teacher educators in an era of accountability, we posed the following questions as part of an ongoing inquiry into our teaching: How might we, as teacher educators, offer preservice teachers opportunities to imagine school as a place where students explore their own interests, question the status quo, and use literacy for social change? How do the preservice teachers respond to these invitations? What questions, tensions, and insights arise? How and when do they draw on and/or problematize their previous experiences with schooling?

In an effort to engage these questions, we consider how preservice teachers in two distinct regional contexts within the United States respond to literacy methods courses that utilize the framework of critical literacy as a lens through which to problematize past experiences, consider new possibilities for schooling, and interrupt dominant conceptions of teaching and learning as neutral, technical endeavors.

Theoretical Background

To better frame our research questions, we situate our work within the theories of feminist pedagogies and critical literacy. These theoretical perspectives work together to establish literacy as political, social, and cultural and knowledge as collaboratively constructed through accounting for affective dimensions, multiple perspectives, and systems of power.

Feminist Pedagogies

Rather than assuming a single universal truth, feminist pedagogies assume that students' experience of the world is based on social location (e.g., Evans, 1979; Richardson, 1997; Weiler, 1991). Additionally, feminist pedagogies attend to the affective dimension of teaching and learning (hooks, 1994; Lorde, 1984). This perspective has led to practices that foreground the role of feelings and personal experience in classroom contexts, such as poetry (Richardson, 1997), narrative (Hesford, 1999), and art (Ellsworth, 2005). On the basis of the assumption that students bring multiple, sometimes conflicting, life experiences to the classroom from their unique social and cultural experiences, feminist pedagogues aim to create contexts for students to question their own experiences through the creation of *contact zones* (Pratt, 1991) that allow for different cultural experiences to be put in productive dialogue.

As feminist teachers in university settings have theorized practices that bring experience into the classroom for knowledge generation, they have also grappled how to support students in seeing their personal experiences as situated within institutions and systems of power (e.g., Britzman, 1999; Kamler, 2001). Britzman

(1999), for example, writes about the role of *institutional biography*, which allows teachers to gain a critical distance from their own assumptions and resist unconsciously reproducing educational practices. In our classes, we aimed to find ways for students to bring in their own experiences with schooling; question their assumptions; re-see their experiences within widening understandings of historical, cultural, political, and institutional contexts; and articulate both their critiques of the status quo and their desires for more humanizing practices for themselves and their students. We see this set of practices that can be mobilized as a means of speaking back to and attempting to disrupt the neoliberal ideologies that have come to function hegemonically in school reform initiatives (Kincheloe, 2008).

Critical Literacy

Like other literacy teacher educators (e.g., Jones & Enriquez, 2009; Rogers, 2013; Vasquez, 2013), we employed frameworks and practices of critical literacy in methods courses. Critical literacy (Christensen, 1999; Freire, 1987; Luke & Freebody, 1997; Royster, 2000) attends to the ways that literacy is culturally, historically, and politically situated and assumes reading and writing to be embedded within one's social world and connected to identity, agency, and power. Luke and Freebody (1997) described the relationship between textual interpretations and social location when they wrote, "One never just (generically) reads. Readers always read something, a textual representation, and readers always take up an epistemological standpoint, stance, and relationship to the values and ideologies, discourses, and worldviews in the text" (p. 195). Similarly, Royster (2000) conceptualized literacy as "sociopolitical action," writing,

> For African American women, becoming literate has meant gaining the skills to read and write; it has also meant taking the power and authority to know ourselves, others, and our circumstances in multisensible ways and to act with authority based on that knowing. (p. 61)

Not only does such a perspective assume multiple possible interpretations of a written text; it also suggests that one's interpretations and literate actions are directly connected to a sense of agency and possible futures.

In the context of the methods courses, literacy is both a topic of study and a way of knowing. Therefore we conceptualized literacy as sociopolitical action for the teachers, their students, and ourselves as practitioner researchers. We drew on a *literacies of teaching* (Lytle, 2006) framework that conceptualizes classrooms, schools, students, and communities as texts with multiple interpretations. According to Lytle,

> to be literate as a teacher means to engage in an ongoing, searching, and sometimes profoundly unsettling dialogue with students, families, administrators, policy makers, and other teachers who may talk, read and write from very different locations and experiences. (p. 259)

Methodology and Methods

Our collaboration was based on our work in two distinct university contexts. In this section, we detail our approach to our research, contexts, participants, shared pedagogical approaches, and methods of data collection and analysis.

Teacher Research

Like Cochran-Smith and Lytle (1993), we define teacher research as "systematic and intentional inquiry about teaching, learning, and schooling carried out by teachers in their own school and classroom settings" (p. 27). Starting from the premise that teachers (and teacher educators) are generators of knowledge, teacher research has a history of responding to injustice and working toward more equitable conditions in schools (Ballenger, 1998; Campano, 2007; Cochran-Smith & Lytle, 2009a). Historically, teacher-researchers have used their work to legitimize the experiences of underserved students and to disrupt deficit perspectives that cast some populations of students as incapable or disaffected (Ballenger, 1998; Blackburn, 2003; Campano, 2007; Fecho, 2003). Moreover, teacher research aims to challenge the notion that knowledge for teaching can only be generated by university researchers, who largely conduct their research outside of K-12 classrooms (Cochran-Smith & Lytle, 1999). In contrast, teacher research as a practice is concerned with disrupting mainstream conceptions of knowledge and considering, instead, how it can be constructed collectively in school and classroom spaces. Ultimately, teacher research aims to work "against the grain" (Cochran-Smith, 2004) and challenge business-as-usual in schools.

Through the process of documenting our classes, looking closely at our students and their work, and making sense of our teaching through collaborative analysis, we joined others in using teacher research to examine the dimensions of our practice as teacher educators that seemed the most puzzling, pressing, and urgent (e.g., Cochran-Smith, 1995; Kinloch, 2013; Rogers, 2013; Simon, 2009). Within a policy environment that is reaching further into teacher education programs, this growing body of scholarship theorizes teacher education from the inside (Cochran-Smith & Lytle, 1993) by identifying issues of practice that directly affect the practice of teacher education.

As a critical dimension of practitioner research, we continually acknowledged the tensions inherent in our simultaneous roles as teachers and researchers and believe that the intersection of these dual positionalities offers rich opportunities for learning, a phenomenon Cochran-Smith and Lytle (2009b) referred to as "working the dialectic" (p. 43). Although, on one hand, we were the course instructors responsible for creating a syllabus, assigning readings, facilitating in-class activities and engagements, evaluating assignments, and determining final grades, on the other hand, we were also researchers interested in creating spaces where students could grapple honestly with the authentic questions and tensions that come with teach-

ing and learning literacy in "these times" (Lytle, 2006). It is in the intersection of these two positionalities, sometimes competing, sometimes complementary, that our work is situated.

Research Context

The context of this study is two separate literacy methods courses that we (White, middle-class, female teacher educators) taught during spring 2013 and fall 2014. In this section, we provide an overview of each of our courses and the students and of our method of collaborating across geographical distance.

Course 1: Teaching of Reading at a southwestern university. Katy teaches a course called The Teaching of Reading in the Elementary School at a large, public, minority-serving university in the Southwest. The course comprises undergraduate students in their junior year of college and is the first course students take after admission to the College of Education. The course meets once a week for 2.5 hours and feels "high stakes" in that the course content is closely tied to a state certification exam. In addition to attending university courses, all of the students are also enrolled in field placements at local elementary schools, where they spend 2 full days a week.

Course 2: Foundations in Reading at a northeastern university. Kathleen teaches a course called Foundations in Reading, Grades 4-8 at a large, public university in the Northeast that is located about one hour from a major U.S. city. Students in the course are pursuing middle grades (Grades 4-8) certification and have concentrations in math, science, social studies, and language arts. Foundations in Reading, Grades 4-8 is one of four required literacy courses in a middle grades certification program. The students were not in field placements in conjunction with the course.

Participants

The study comprised 48 participants. Twenty-four participants were enrolled in The Teaching of Reading in the Elementary School, nine of whom identified as Hispanic/Latino and one of whom identified as Palestinian. Twenty-four were enrolled in Kathleen's course, Foundations in Reading, Grades 4-8. Of these students, 23 students identified as White, and one identified as biracial. All students in both classes agreed to participate in the study. Nineteen self-selected to participate in a focus group when the opportunity was offered to all participants (eight from the southwestern university and 11 from the northeastern university). In consenting to participate in the study, students were reminded of the authors' dual roles as researchers and instructors. We acknowledged the tensions inherent in these positions and reminded students that their willingness to participate (or not) in the study would have no bearing on their grades.

Shared Pedagogical Approaches:
Critical Teaching as Collaboration

Our history as collaborators began in graduate school, where we both completed doctoral degrees in reading, writing, and literacy and had the opportunity to coteach several courses. We also both taught elementary school for a number of years in the Washington, D.C., area and have extensive experience working with diverse populations of elementary students, many from families who have recently immigrated to the United States.

Because we valued our collaboration as graduate students, as we transitioned into becoming faculty members at our respective institutions, we created a structure by which we *cotaught from a distance*. Prior to each iteration of our course, we met in person (either at conferences or visits) to work through our syllabi, determine some common experiences, and develop shared questions for inquiry. Throughout this process, we felt supported and challenged by each other and reflected that we felt less alone in our classrooms. Thus we thought of ourselves as coteaching from a distance in that we had shared a vision, goals, and questions about our work and drew on the collective knowledge that our collaboration generated. Even though our settings and demographics differed, we drew on our shared teaching philosophies to structure and facilitate our courses in similar ways. Thus we aimed to actualize a critical literacy stance in our respective settings.

Classroom practices associated with critical literacy include reading supplemental texts, producing countertexts, and conducting student-choice research projects (Behrman, 2006). In our courses, we enacted critical literacy in several ways. We framed our courses using the concept of *reading the word and the world* (Freire, 1987); provided spaces and invitations for preservice teachers to bring their own autobiographies into the classroom; structured opportunities for personal, creative, artistic, and emotional responses to texts; and had students design curricular units with a focus on social change. One of the key practices we introduced was the shared reading of fictional texts (*Locomotion* by Jacqueline Woodson in Katy's course and *The Absolutely True Diary of a Part-Time Indian* by Sherman Alexie in Kathleen's course) that highlighted themes related to race, class, cultural identity, language, and family relationships. These texts provoked conversation, fostered collaboration, and offered preservice teachers points of resonance and divergence with their own lived experiences (Adomat, 2014). As the forthcoming data evidence, critical engagements with these texts enabled discussions around literacy, including, What is literacy? What does/can literacy do in the world? Who counts as literate, and who decides? These are questions that we suspect may not have been raised outside of a deep engagement with literature.

In our classes, we started from the assumption that K–12 students' opportunities to know themselves and act on their world through literacy depends on their teachers' beliefs about literacy and their power and authority to do the same. A critical literacy perspective allowed all of us—in our roles as teachers, students,

researchers—to imagine how literacy education could open new possibilities for students in schools to know themselves, their circumstances, and their ability to act on their worlds.

Data Collection

In fall 2013, we conducted a pilot study through which we began to explore our collaborative teaching, refine our data collection process, and develop our research questions. The official data collection for this study occurred in both of our classes in the spring semester of 2014. Our data sources included practitioner researcher journal entries written weekly (14 weeks total for each of the two courses, for a total of 28 entries); one recorded and transcribed class discussion for each class (two total); written artifacts that emerged from the course, including the syllabus (two), mid-course evaluations (two sets, one from each class), and students' weekly online reading responses (a total of 15 weeks, eight from Katy's class and seven from Kathleen's class); and student work. The student work that we analyzed for this study included student literature response experiences and reflections (three in each class for a total of six) and students' final projects (eight projects from Katy's class and nine from Kathleen's class). We also each facilitated two focus groups (four total) with participants who self-selected to participate as a means of deepening our analysis and conducting member checks on the emerging themes. These focus groups occurred at the end of the semester, after the classes were over and final grades had been submitted. In Katy's class, eight students participated in two focus groups; in Kathleen's class, 11 students participated in two focus groups. The focus groups were audiorecorded and transcribed.

Data Analysis

In winter 2013, after having each taught our respective courses once, we conducted an initial round of analysis on our pilot data, starting with open coding (Strauss & Corbin, 1998), in which we reread our data and generated themes and categories based on our research questions and then read through the data a second time to confirm whether salient themes were indeed present. We then refined our initial research questions (which were very broad) and noted places where we would align our teaching (see earlier). Throughout spring 2014, we collected data formally. We continued collaborative research conversations as we each taught our courses a second time and continued our efforts to make sense of our pedagogy. After each class we taught, we wrote memos in a research journal, which was a shared document. These memos aimed to capture what happened in class, raise questions and offer insights about our research questions, and grapple with challenges that we faced in our teaching. We then read each other's accounts, commenting in a different color on the shared document. We met weekly to discuss our classes, plan next steps, and identify questions that were coming out of our work that we wanted to explore more.

Mid-semester, we read through our analytic memos to substantiate themes we had previously identified, identify new themes and areas of interest, and locate confirming or disconfirming evidence for the patterns we saw emerging. We narrowed in on our current research questions, and our memos for the second part of the semester became more focused. At the end of the semester, each of us conducted two focus groups with preservice teachers in which we asked them to describe turning points in their thinking, share specific experiences and assignments that impacted them, articulate visions for how they wanted to teach in the future, and identify some of the challenges they expected to face as teachers. We used these focus groups as an opportunity to confirm or disconfirm some of the themes that we had previously identified and to gain another data point on how students experienced the courses.

Findings

Our findings can be categorized under two significant threads. The first is the idea of *rereading*. Within this area, we consider the degree to which preservice teachers must unlearn certain schooling practices and reread their past experiences to write a new future for themselves as teachers. The second thread focuses on assessment and provides a concrete example of what unlearning and rereading looked like in our methods courses.

Rereading

The critical literacy framework and classroom engagements offered students many chances to bring their own experiences to their learning. In looking at student work and reflecting on their online and in-class discussions, we noticed places where students took up opportunities to reread their pasts. Thus their own experiences in school became a point of departure for their theorizing practices, with the critical literacy frame offering chances for them to read their pasts critically. In this section, we highlight two ways that students engaged in such rereading: *rereading curriculum and school practices* and *rereading professional cultures of schools*.

Rereading curriculum and school practices. As a result of reading foundational critical literacy theorists (Christensen, 1999; Freire, 1987; Luke & Freebody, 1997), students in both classes reread their past experiences in school and discussed what aspects of schooling they might need to unlearn to move forward. For example, in one of Kathleen's early classes, in which students worked in small groups to discuss student-generated questions related to the concept of *reading the word and the world* (Freire, 1987), students engaged in an extended discussion in which they realized the shortcomings and omissions within their curriculum. When Sean and Mike (all names are pseudonyms), two White men, reported out to the class after discussing the topic of the *political nature of literacy and school*, they shared that they realized that they had read "at most 25% women authors in school, maybe

more like 15%." Then they posed a rhetorical question to the class, asking how many women authors they had read, which Kathleen took up by saying, "Yeah, I'm curious. Call it out—what percentage of books did you read in high school that were women authors?" Answers were mostly in the 20% range, and people started trying to name just a few women authors that they had read.

The conversation then turned to other subjects. Dina, a White student, said she felt like she had been "unlearning" since she got to college and shared that her history teacher said they would be unlearning everything they were taught in high school. A few students then related this idea of unlearning to math, sharing that their college math courses had made them realize that they had only been exposed to rote procedures rather than conceptual understanding in their K-12 math classes. This was followed up by a few students who shared a similar feeling about writing, as another student talked how she only learned the five-paragraph essay in high school, and then in college, her intro writing teacher said that the five-paragraph essay structure is not useful. Jen, a White student, added that she didn't feel like there was much emphasis on it.

Kathleen then asked if unlearning is uncomfortable or feels bad sometimes, and Dina said it feels bad to think she just believed everything all that time, though maybe her teachers didn't know any better. "But why not?" she then asked. Other students seemed hesitant to take such a critical stance toward their education, with Siobhan, a White woman, sharing that she didn't feel that it was bad, that there must be a reason they learned it that way. This conversation illustrates how students took up course themes to generate their own questions about the political nature of school and then came to critical awareness of the limits and omissions in their own education.

In an online discussion, prompted by a reading of the novel *Locomotion* (Woodson, 2004), students in Katy's class engaged in conversations around the quality and relevance of the basal readers that they were assigned to read in elementary school. After writing about loving to read as a young child, Alina, a White preservice teacher, posted the following on an online discussion board: "My joy and love of reading severely diminished when I went to school. The books we had to read were dull and lifeless. They came in a single bound book but there where many stories in each book, stories that I would have no remorse throwing into a fire as kindling."

In a similar reflection about the relevance of reading and writing in school, Bonita, a Latina preservice teacher, posted the following:

> The most interesting idea throughout both of the readings was the idea of having reading and writing mean something to students. Growing up I hated reading and thought it was pointless. This is because the lessons never related to me as a person. Everything we wrote was some kind of a prompt or some book that was in the curriculum. I understand that this is necessary at times but I also understand that students need to read for a purpose.

These comments show preservice teachers rereading the literacy instructional

practices they experienced with a new set of theoretical lenses and also developing countertheories to literacy instruction, such as reading for a purpose.

Preservice teachers used their own literacy experiences in the methods courses to deepen these countertheories. For example, Melissa, a Latina student in Katy's class, posted the following commentary:

> We have to learn each child and where they come from and try our best to tie those things into the curriculum. It allows the children to want to learn. Now that I am in further into my degree, I have gained my love of reading back. When I read Wilson (2002) and Woodson (2004), I didn't want to put either of them down. I read something that was interesting and related to me, but was learning at the same time. I think it's important to do that when we are teachers.

This comment shows how Melissa drew not only on course textbooks (Lorraine Wilson's 2002 *Reading to Live*) but also on her reading of literature in the methods course (*Locomotion*) to use her own experience as a reader to offer a countertheory of literacy as something that should be "interesting and related to me."

Not only did the preservice teachers critique the curriculum that they experienced in school in the context of the methods courses but the course experiences also led them to reread school practices. Lytle (2006) talked about the *literacies of teaching* as a "critical framework through which classrooms, schools, districts, and communities are viewed as texts with multiple possible interpretations and the potential to become generative sites of inquiry" (p. 258).

In the methods courses, preservice teachers reread the school practices that they experienced, especially practices around labeling, testing, grouping, and tracking. For preservice teachers who were tracked in lower classes and/or given particular labels, these memories had a visceral quality. For example, the excerpt from Katy's field notes documents her own response to an episode that David, a Mexican-American male student, shared in an online discussion: "He wrote about remembering being a special education student and being taken to a separate building to do a reading assessment every few months and seemed to remember it with a haunting level of clarity and almost trauma."

Other preservice teachers, too, shared their experiences of being grouped, labeled, tracked, and tested in ways that brought to the surface feelings of pain and anxiety. For example, one preservice teacher critiqued the predominance of assessments that required her to read aloud in front of the teacher and her peers. Although she remembers being a "decent reader," she is able to critically reflect on how "terrifying" this process must have been for poor readers. Even when the memories didn't have such a visceral quality, many students in Katy's class highlighted how rote procedures were favored at the expense of meaning making; moreover, preservice teachers analyzed issues of power and difference within their childhood reading instruction and how divisions among poor readers and good readers were both reinforced and normalized.

Rereading professional cultures of schools. Because the field of teacher education has long recognized the power of the apprenticeship of observation (Lortie, 1975), we took note of moments when preservice teachers in our classes took a critical stance on school cultures, with a specific focus on common practices among teachers. As the preservice teachers in our classes developed more inquiry- and critical literacy-based approaches to teaching, they raised questions about working within school contexts where not all teachers shared their philosophies. They brought up questions about being able to justify their practices to colleagues. For example, Darla, a White student in Kathleen's class, picked up on another classmate's comment when she wrote,

> I like your question about changing the mindset of teachers who have been around for a while. I also wrestle with this question and I wonder if I go into the classroom as a rookie teacher with a lot of inquiry-based, out of the box, literacy-driven activities (vs. textbook and worksheets), if other veteran teachers will question my theories or practices.

Other students made comments focused less on being able to justify practices and more on interrogating their own responsibility as teachers to change practices of colleagues that have a negative impact on students:

> If a fellow teacher in your school has very strong and negative views about a particular culture, race, religion or other background and you witness it negatively affecting a student's self-esteem or self worth, what can a teacher that is new to the field/school/district do?

Still others focused more on what it might mean to take a particular approach to literacy education when not all teachers in the building work with the same assumptions about literacy education. In a focus group, Anne, a White student, shared,

> I want to begin to give the students a different definition of literacy—the one that we've come up with. Although I don't know if it's really gonna be beneficial, 'cause they're gonna go on to the next teacher, they might completely take that all away from them again, tell them, "No, it's reading, writing, and understanding." But I feel like it's worth a shot. Maybe the students will challenge their next teacher and their thinking of what literacy is.

As these comments reveal, the preservice teachers were likely drawing on their past experiences of school and/or representations of teaching in the media to anticipate and actively grapple with what it might be like to take critical inquiry approaches to literacy education within constraining school environments. These comments suggest different concerns—being taken seriously by colleagues as a rookie teacher, advocating for students who face discrimination by other teachers in the building, or working against the prevailing views about literacy. As the third comment suggests, some of the preservice teachers saw their own position as a potentially powerful one, believing that they might empower their students to view literacy in new ways and subsequently teach their colleagues.

Amid these conversations about the challenges of working in uncritical or constraining school cultures or navigating difficult relationships with colleagues were moments when preservice teachers imagined new ways of being as teachers that allowed them support in enacting their visions and theories.

For example, in Katy's field observations of her students planning lessons based on the novel *Locomotion* by Woodson (2004), she wrote,

> After they wrote their lessons, they put them on chart paper and hung them on the wall. We did a gallery walk with sticky notes and they gave each other feed-back. I then gave them five more minutes to get back with their group and read the feedback. I overheard Sofia say, "If more collaboration like this happened in schools, education would radically change."

We found it notable that, while preservice teachers experienced many forms of collaboration within their schools, including meeting to discuss students' Individualized Education Plans, planning instruction in grade-level teams, and even participating monthly in professional learning communities, they identified this deep thinking and talking around a text as a unique form of collaboration, one that they had not seen or experienced as student teachers in field placements. These examples speak to the importance of allowing aspiring literacy educators the space to grapple with how they will interact with school environments and colleagues in ways that allow them to continue to do critical inquiry with their students.

Taken together, these examples of rereading make visible some of the inquiries with which the teachers engaged throughout our courses. Throughout the online and in-class discussions, engagements with literature, and focus group conversations, students took a critical stance toward their own educations and imagining how they might create different kinds of spaces for young people in the future. One of the concrete practices to which this kind of rereading was most immediately applied involved assessment. It was necessary for students to radically reconsider the assessment they experienced as students to imagine new possibilities for the future.

Problematizing Assessment

Preservice teachers in both research contexts also struggled to reconcile visions for authentic and critical assessment processes with their own experiences as students in school settings where standardized and formal measures, such as quizzes and tests, were favored. One of our goals in our classes was to illustrate the limiting and damaging effects of narrow assessment measures (Ravitch, 2014) and to invite preservice teachers to think differently about how literacy ability and competency might be assessed in schools (Campano, 2007). In this section, we build on these ideas by highlighting preservice teachers' past experiences with assessment, discussing alternative approaches to literacy assessment that we introduced in our respective classes and considering how preservice teachers were able to reconcile these alternative visions with the current policy environment.

Past experiences with assessment. Preservice teachers' past experiences with assessment significantly shaped their perspectives on and attitudes toward literacy assessment. In a telling moment in class, Katy asked the preservice teachers to reflect in writing on a time when they had been assessed in a meaningful way. There was an uncharacteristic amount of silence as they pondered when they might have experienced authentic, meaningful, or purposeful assessment. Two preservice teachers ultimately raised their hands and offered examples. Both were multiple-choice assessments. Katy became increasingly concerned that the preservice teachers' own schooling experiences in a test-intensive environment precluded them from experiencing assessments that might have altered or expanded their perspectives on teaching. Moreover, Katy recalled her own experiences learning to implement portfolio assessment by having the opportunity to see it in use at an innovative elementary school in Colorado. Without that image of students sharing their portfolios in an impressive, articulate manner or the teachers' integrating portfolio requirements across content areas, it would have been very difficult for Katy to begin using portfolios in her classroom. Thus, as a methods instructor, the problem at times felt insurmountable: When no image of the possible exists, how can preservice teachers become agents of change who imagine new possibilities for students and schools?

Similar problematic experiences with assessment emerged when the preservice teachers were asked to reflect broadly on their experiences as readers and writers in elementary school. Many memories of assessment and categorization surfaced as a result of this invitation. For example, Erica, a White preservice teacher in Katy's class, wrote the following on an online discussion board posting midway through the semester:

> My only personal memory of formal reading assessment was a program called SRA. It was a color-coded program of booklets containing short readings, followed by multiple-choice questions pertaining to vocabulary and comprehension. Students would progress through the levels as they completed the dozen or so individual tests within each color group. The readings were dull and did not hold my interest, but I knew that in order to progress I had to pay attention while reading. A record of each student's status was kept on a chart at the back of the classroom. For me, the process was stressful, but in a good way. I and others in the class saw it as a competition—we wanted to be at the top of that chart. In retrospect, this must have been an awful experience for those who were poor readers and therefore consistently at the bottom of the chart.

Preservice teachers needed opportunities to unpack these assessment experiences to assess their constraints and affordances. For example, until Erica was asked to consider assessment through a critical lens, she saw no problem with the SRA approach, primarily because she was a strong reader who progressed through the program without a problem. Other preservice teachers who had not been identified as successful or competent readers in elementary school shared experiences with assess-

ment that were often complicated and painful. David, a Mexican-American preservice teacher, for example, was able to not only reflect critically on his own experience with special education testing but also make broader and more universal connections to the climate of testing nationwide and how this might impact students:

> I remember when I was in grade school I had a lot of trouble with reading. I was in the special education program and was taken out of school a few times for testing. The tests would take place in this little building build near the public school office. There was always a test book that folded up into a triangular prism and I would have to read the side that faced me while the administrator would make marks on the other side as she/he followed along to what I read. Sometimes I would have to read words that were not words just to test how I would try to sound it out. These tests took about half a day to a day and my dad would drop me off and then pick me up after it was done. . . . I am very interested in experiencing the assessment environment from the other perspective and hope that my prior experiences help me make it a more comfortable assessment. I do not like all the assessments we give kids and want to lessen the impact they have on true learning and teaching. I know it will be hard to fight the assessment tidal wave our country has been caught up in but I will do my best to practice assessments that avoid a stressful environment, while ensuring that I can track all my students' academic growth appropriately.

Thus, in many instances, we noted that preservice teachers who had been designated as "good readers" during elementary school, like Erica, initially had difficulty critiquing traditional literacy assessments such as multiple-choice tests, whereas those who had been subjected to special education, participated in second language services, or were otherwise designated as "poor readers," like David, immediately took issue with the limitations of these measures. Assessment, then, and notions of what counts as assessment became contentious issues in both classrooms as students openly questioned issues related to validity, rigor, and equity. These examples illustrate the power of even simple reflective activities in supporting preservice teachers in critically reflecting on past experiences to develop empathetic stances or to connect with broader movements that might prove problematic on a larger scale.

The power and promise of alternative assessment. As we reflected on the preservice teachers' previous encounters with assessment and their immersion in rigid, testing environments as children, we each planned assignments and activities intended to support preservice teachers in developing an alternative vision of literacy assessment.

For example, in response to the silence encountered when asking preservice teachers when they had been assessed in a meaningful way, Katy asked preservice teachers to read two visions of purposeful assessment—one by Wiggins (1998) and the other by Johnston (1997). By using these texts as thinking partners, preservice teachers collaborated to create their own visions of literacy assessment. Collectively, preservice teachers generated a typology of literacy assessment that they described

as "multi-faceted, starting from prior-knowledge, relevant, authentic, ongoing and individualized."

Another way that we each supported alternative visions of assessment was through developing an integrated literacy unit that we wanted the preservice teachers to plan using *backward design* (Wiggins & McTighe, 2005) and that we hoped would provide opportunities for them to design rich and rigorous assessments. For the most part, students eagerly embraced this opportunity. For example, as a culminating assessment for a third-grade unit on the Industrial Revolution in Katy's class, preservice teachers designed an alternative assessment that spoke directly to the goals of the unit:

> The students will develop a blueprint of a useful invention for the final project. They will write one paragraph about the pros and cons of their possible invention. . . . In assessing the project, the students must show that they understand pros and cons and can identify why their invention is useful and why it could be considered dangerous.

These preservice teachers recognized that because the enduring understandings they had outlined for the unit involved the pros and cons of technological innovation, including considering costs such as child labor and poor working conditions, an assessment like the one described would enable the preservice teachers to see whether the students could apply their learning to a new situation—creating their own invention.

Another group of preservice teachers in Kathleen's class whose unit focused on the civil rights movement designed a unit assessment that aimed to assess how students could connect the reality of the civil rights movement to their daily lived experiences as raced/classed and cultured beings. They designed a final project that involved middle school students teaching younger students about what they had learned using art created by the older students as a starting point for the discussions. Ned, a White student, shared his rationale:

> I can assess students on their ability to relate the history of civil rights to appropriate connections in their lives. I can assess whether or not the student genuinely grasped the concept of raising tolerance and refusing to accept continuation of social injustice in their community. Teaching the younger students will also give a good opportunity for the teacher to see how much the student took away from this project as they are sharing what they believe to be the most important concepts to pass on.

Taken together, these examples illustrate that preservice teachers were actively wrestling with inherent limitations of mainstream assessments and beginning to recognize the ways in which alternative forms of assessment are better suited to evaluating how students apply principles of a unit of study to their lives or how they engage in deep readings of significant, historical texts collectively. The assessments that the preservice teachers designed as part of their units aptly illustrate

that, with guidance, novice educators can think beyond the limiting assessments they may have experienced as students and begin to conceptualize more complex ways of evaluating knowledge.

Reconciling alternative assessment with policy environment. Although these unit assessments demonstrate the potential power of methods instruction to transform thinking, many of the preservice teachers still struggled to reconcile these new notions of assessment with hegemonic perspectives of assessment that suggest the only valid or credible assessments are "tests." In some cases, the preservice teachers were acutely aware of the policy environment in which they and their future students would be operating, which at times led to dissonance as preservice teachers attempted to translate knowledge from the methods course to the real world of schools and schooling. For example, a question that surfaced frequently in Kathleen's classroom involved the tension between employing alternative approaches to assessment and preparing students for standardized testing. For example, Libby, a White woman, said,

> A question that I have about assessment is, if you assess students in ways such as projects and writing assignments rather than tests, how will they be prepared for standardized testing? Is it our responsibility to prepare students for standardized tests?

In a complementary example from Kathleen's class, Dina responded to a class activity that modeled an alternative approach to assessment by noting that while she liked the activity, she would want to have a test, too, in order to determine what her students understood. When Kathleen left some space for response, Libby said they didn't feel they would need a test. This led to a conversation about how the activity allowed for students to show their understanding, which then led to a conversation about other ways of assessing (some said observations, some said individually written reflections).

Later, when discussing how to assess an artistic response to a piece of literature, Callie, a White woman, worried that although alternative assessments were engaging, they might not reward those who put the most effort into a task. For example, someone could produce a beautiful, artistic response with very little effort, while someone else could work tirelessly on the same task and not have a professional final product to show for it. The difficulty of determining effort on formal assessments like tests and quizzes was not explicitly mentioned, nor did students mention the idea that tests might privilege certain cultural ways of knowing, although this was discussed in class. These omissions suggest that students might take the "fairness" of tests for granted.

These questions about fairness prompted preservice teachers to probe more deeply into the purposes of assessment and to pose questions that highlighted the inconsistencies endemic to all forms of classroom evaluation. Melissa, a Latina student in Katy's class, for example, wrote the following in an online discussion board posting:

> A question I have about assessment is that of fairness. All students are diverse in their learning style and personality, whether they are visual, auditory, kinesthetic, extroverted or introverted. Thus, if we base assessment off of a single method such as how much did this student contribute to the class discussion, are we really being fair? The student may know more than his or her extroverted peer, but not feel comfortable sharing with the entire class. On the other hand, some students may have test anxiety and perform poorly on normalized exams as a result. How do teachers know what, or how many, types of assessments are appropriate for different kinds of projects and assignments?

By introducing preservice teachers to the complexities of assessment and unpacking some of their taken-for-granted assumptions about who benefits from assessment, we allowed these teachers to begin to question the very nature of evaluation—a skill they must possess if they are going to become critical educators who question policy. While the kind of questioning demonstrated earlier is essential to any academic discipline, it becomes even more urgent in a field like education, in which teachers are likely to reproduce the kinds of schooling they experienced (Lortie, 1975).

Implications

The findings described here suggest several important implications for teacher educators choosing to teach in "these times" (Lytle, 2006). First, teacher educators must be able to facilitate not just learning but also "unlearning"—a process that requires preservice teachers to unpack their past experiences as students to interrupt and essentially reread their perspectives on schooling. Second, preservice teachers need opportunities to work across methods courses as a means for helping preservice teachers construct new visions and new possibilities for educational practice. Last, educational policy and the politics of schooling must be foregrounded in teacher education programs if preservice teachers are to become educators capable of negotiating complex policy environments, especially those in which their voices are often discounted.

1. Teacher educators need to reexamine their role as instructors to become facilitators of "unlearning" and "rereading." The apprenticeship of observation (Lortie, 1975) has long been an issue within teacher education and one that countless teacher educators have sought to address through their instructional approaches (e.g., Boyd, Gorham, Justice, & Anderson, 2013; Grossman, 1991; Knapp, 2012). (We must consider, at this historical juncture, what the apprenticeship of observation looks like against the backdrop of NCLB and the limited views and perspectives on schooling that might emerge as a result.) Even preservice teachers who recognize the deeply problematic implications of education within a climate of high-stakes accountability must still unlearn how to adopt these approaches. Moreover, this idea of unlearning is even more difficult when neoliberal models still dominate in most schools and when these ways of teaching are reinforced through field place-

ments and practicums (Selwyn, 2007). Therefore teacher educators must design curricula explicitly aimed at rereading past experiences and at reconstructing or reenvisioning future practice. If preservice teachers, for example, are going to critique and problematize the use of multiple-choice assessments, they must also have an opportunity to design and utilize alternate forms of assessment and experience firsthand their potential benefits in the classroom.

2. Preservice teachers need a multitude of opportunities across methods courses to construct and enact a vision of education. To be truly effective, the processes of critical visioning and reimagining mentioned here must be programmatic and not isolated within the purview of a single methods course. Rather, preservice teachers should be provided opportunities across their classes to consider what schooling could look like outside of a system that privileges standardized testing and limited forms of accountability (Simon, 2009; Sleeter, 2007). This kind of work requires more than simply assigning students to read about diverse pedagogical practices. We must work alongside classroom teachers to co-construct experiences that allow our preservice teachers to apply their vision in authentic contexts; to observe firsthand what happens when students are engaged in purposeful work; and then to reflect on these encounters with colleagues, professors, and school personnel. Ironically, as this kind of work becomes increasingly urgent, in Katy's experience helping to coordinate an elementary education program in a large southwestern city, fewer and fewer classroom teachers are willing to take on the work of mentoring preservice teachers owing to the pressure of value-added models of teacher evaluation. Thus questions remain about how we might incentivize classroom teachers to collaborate with us in this kind of critical visioning process when myriad factors discourage them from doing this work.

3. The policy environment that continues to shape teaching and learning should be an explicit curricular topic in methods courses. Although teaching has always been a political act (Freire, 1970), it continues to be depicted in mainstream reform efforts as a neutral endeavor that can be easily measured and quantified through the metric of the test score (e.g., Kumashiro, 2012; Ravitch 2014; Rivkin, Hanushek, & Kain, 2005). Preservice teachers preparing to enter the teaching profession cannot afford to be apolitical and must emerge from teacher education programs with the ability to read and interpret policy and understand its implications for teaching and learning. Therefore policy, both current and past, must figure into discussions, readings, and course assignments (Edmondson, 2004). Preservice teachers must consider the challenges in designing and setting policy in education, must examine who creates policies and who are impacted by them, and must propose viable solutions concerning what can be done when policies further marginalize populations. Most critically, in the field of literacy, preservice teachers must also consider who is poised to make substantial gains from these policies (i.e., basal reading companies, software corporations, etc.; Altwerger, 2005; Larson, 2001; Shannon, 2007).

Conclusion

Neoliberal approaches to school reform are unlikely to disappear anytime soon. Teacher educators cannot afford simply to adapt our classes in response to the latest wave of mandates without also addressing the impacts of these mandates on students, teachers, and schools. Rather, we must "read the world" of educational policy critically and require that our students do the same. This means utilizing pedagogies and practices that fall outside of the typical purview of methods courses and highlight personal experiences, critical inquiry, policy analysis, and alternative pedagogies to work toward a new vision of schooling. In advocating this approach, we want to be clear that this does not mean a shift away from introducing teaching practices and approaches that preservice teachers can utilize in their respective classroom contexts. Rather, we argue that methods classes must be much more than a site of skill acquisition. Without opportunities to critically reimagine schooling alongside exposure to content and pedagogies, there is little hope for true educational transformation.

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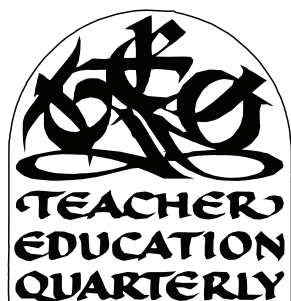
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Pedagogical Reasoning and Action:
Affordances of Practice-Based
Teacher Professional Development

By Shannon Pella

A common theme has been consistently woven through the literature on teacher professional development: that practice-based designs and collaboration are two components of effective teacher learning models. For example, Marrongelle, Sztajn, and Smith (2013) found that teacher learning contexts are optimal when they are "intensive, ongoing, and connected to practice, focus on student learning, and address the teaching of specific content" (pp. 203-204). Additionally, "by focusing on practices that are directly connected to the work that teachers do in their classrooms, teachers have the opportunity to develop knowledge needed for teaching by investigating aspects of teaching itself" (pp. 206-207). In terms of collaboration, Whitcomb, Borko, and Liston (2009) suggested that "professional development experiences are particularly effective when situated in a collegial learning environment, where teachers work collaboratively to inquire and reflect on their teaching" (p. 208). Furthermore, according to a status report on international teacher professional development, "the content of professional development is most useful when it focuses on concrete tasks of teaching, assessment, observation, and reflection" (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009, p. 5). Each of these representative excerpts reflects a larger body of research that highlights collaboration and practice-based contexts as critical aspects of promising teacher professional development models (Darling-Hammond, 1989, 2002, 2006;

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Desimone, 2009; DuFour & Eaker, 1998; McLaughlin & Talbert, 2006; Wayne, Yoon, Zhu, Cronen, & Garet, 2008).

In addition to collaboration and practice-based designs, inquiry cycles have been long recognized as catalysts for teacher professional development. Decades of research have described how teacher learning community models, which include some aspect of classroom-based inquiry, have contributed to building teacher capacity (Cochran-Smith & Lytle, 2009 Darling-Hammond, 2002; Grossman, Wineburg, & Woolworth, 2001; Lieberman & Miller, 2008; Lieberman & Wood, 2003; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006).

Practice-based teacher professional development models can take a variety of forms. Some popular models include teacher learning lab teams, inquiry groups, book study and teacher research groups, school-based professional learning communities, peer observation teams, participants in instructional rounds, collaborative action research groups, and lesson study teams. In this study, the term practice-based means that teacher learning takes place in K-12 classroom contexts in real time with the teacher of record and his or her students present and engaged. Practice-based learning opportunities can comprise the entire professional development model or be an extension from a workshop, training, class, or seminar that takes place outside the K-12 classroom. Videotaping teaching and analyzing lessons through technology have gained popularity and can be effective ways to gain insight into teaching and learning (Lewis, Perry, Friedkin, & Roth, 2012). However, for the purposes of the present study, the term *practice-based* means that at least some of the teacher learning work occurs in the context of an active K-12 classroom. The practice-based and collaborative inquiry professional development model designed for this study is an adapted form of lesson study.

Lesson Study

A typical lesson study involves teachers in cycles of collaborative inquiry though topic selection, lesson design, observations of lessons, analysis of data from observed lessons, and application of new knowledge to inform the next cycle. Lesson study is a popular form of teacher professional development in Japan. In both Japan and the United States, lesson study has been shown to contribute to the knowledge base and pedagogical development of teachers (Chokshi & Fernandez, 2004; Hiebert, Gallimore, & Stigler, 2002; Lewis & Hurd, 2011; Lewis et al., 2012; Lewis, Perry, & Hurd, 2004; Lewis, Perry, & Murata, 2006; Pella, 2011, 2012, 2015). To support purposeful learning, Japanese lesson study groups establish a well-developed set of issues about their practice, clear plans and approaches for how to engage in their exploration, and a commitment to assessing their lesson study activities against their goals (Chokshi & Fernandez, 2004). School-based lesson study, in which teachers conduct lesson study around a shared research theme chosen by the staff, is rare in the United States (Lewis & Hurd, 2011). Even more rare is research on

lesson study that is focused on issues in teaching and learning writing. Most lesson study research to date has reported findings from lesson study projects focused on math and science. This study sought to contribute to the literature by following five middle school English language arts teachers through three years and nine lesson study cycles focused on teaching and learning writing.

Purpose and Research Questions

The purpose of this research was to uncover and describe in detail what makes collaborative inquiry and practice-based designs compelling features of effective professional development models. In other words, this study was concerned with locating, if they existed, the specific *processes and practices* of practice-based models that afford teacher learning. To these ends, this study sought to uncover and describe *pedagogical reasoning and action*, which, according to Shulman (1987), are the types of processes and practices that can lead to shifts in understanding and build a knowledge base for teaching. Pedagogical reasoning and action are a set of processes of central importance to the development of pedagogical content knowledge—"that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (Shulman, 1987, p. 8). Thus the present study sought to uncover and describe how a practice-based lesson study model afforded teachers the opportunity to engage in pedagogical reasoning and action and make lasting pedagogical shifts. The following research questions were addressed: (a) How, if at all, does a practice-based learning model afford opportunities for pedagogical reasoning and action? (b) What, if any, pedagogical shifts did teachers make and sustain beyond the lesson study?

Conceptual Frameworks

Although the subject matter and foci of any given professional development program will vary, the basic goal for teacher professional development is to provide learning experiences that promote the types of pedagogical shifts that can advance student learning. Thus the constructs under investigation in the present study are *pedagogical reasoning* and *action* (Shulman, 1987). By engaging in pedagogical reasoning and action, teachers can shift from initial understandings of content to developing pedagogical content knowledge. Teacher educators and professional development providers may recognize that practice-based collaborative inquiry models are effective, but perhaps even more important is understanding why these models work, *what happens* that affords teacher learning, and what specific *processes and practices* are afforded by practice-based designs.

Pedagogical Reasoning and Action

Pedagogical shifts are rooted in the processes and practices of developing a knowledge base for teaching. In the present study, pedagogical shifts are defined according to Shulman's (1987) description of pedagogical reasoning and action, in which a teacher shifts from an initial comprehension to a new comprehension. Pedagogical shifts are characterized by a teacher's transformation of content knowledge into forms that are pedagogically powerful and adapted to fit the students. The shifts occur through the process of transformation, which, according to Shulman, requires some combination of the following:

> (1) Preparation of text materials including the process of critical interpretation (2) representation of the ideas in the form of new analogies or metaphors (3) instructional selections from among an array of teaching methods and models (4) adaptation of these representations to the general characteristics of the children to be taught (5) tailoring the adaptations to the specific youngsters in the classroom. (p. 16)

In his model of pedagogical reasoning and action, Shulman suggested that reasoning by teachers about their teaching also includes evaluating student understanding both during and after a teaching and learning event. This process also includes teacher self-evaluation, "on-line checking for understanding and misunderstanding that a teacher must employ while teaching interactively" (p. 18). Furthermore, pedagogical reasoning involves teacher self-evaluation because "evaluation is also directed at one's own teaching and the lessons and materials employed in those activities, [and] leads directly to reflection [which is] the use of particular kinds of analytic knowledge brought to bear on one's work" (p. 19). This process of evaluation and reflection, in pedagogical reasoning, can lead to "new comprehension," which can encourage teachers to develop a new repertoire of activities for teaching.

According to Shulman (1987),

> the key to distinguishing the knowledge base for teaching lies at the intersection of content and pedagogy, in the capacity of the teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by the students. (p. 15)

Pedagogical reasoning clearly involves observation, reflection, ongoing formative evaluation, and assessment as a part of a process of understanding, judgment, and actions, which lead to "wise pedagogical decisions" (p. 14). The process of pedagogical reasoning and action, through which teachers shift from initial states of comprehension to new comprehension, provides a compelling and replicable conceptual framework for examining practice-based teacher learning.

Methods

Research Design

This study involved three years and nine cycles of lesson study. Each collaborative cycle included topic selection, lesson design, lesson observation, observation debrief, and the analysis of student learning from the lesson. Each cycle lasted between four and six weeks. Over a three-year period, each teacher was observed teaching a lesson at least twice. During each observation, teachers interacted with students to gather a wide variety of data about student learning. A grant paid for teacher release days to observe each other five days per year. The topics participating teachers selected were based on the interests of participating teachers by considering the assets, interests, and learning needs of their culturally, linguistically, and economically diverse students.

Each of the topics selected was grounded in the research on teaching and learning writing and literacy instruction more broadly. Table 1 lists the main topics under investigation and a focused research question for each topic. It is important to note that there were many other goals, interests, and insights into teaching and learning that are not listed in Table 1. The lesson study afforded opportunities

Table 1
Lesson Study Topics

Lesson study cycle	*Topic of lesson study/focal questions*
2008-2009	
Cycle 1	Response to Literature (R2L) Writing: How can we support students to integrate evidence from text into responses to literature essays?
Cycle 2	How can we support analytic (close) reading of texts (with a focus on identifying and explaining how the themes are developed across the text) to prepare for the R2L essay?
Cycle 3	Persuasive Writing: How can we support students to develop their point of view on a topic for persuasive writing?
2009-2011	
Cycles 4 & 5	How can we support students to see the bigger picture of the elements of an argument? To understand the different choices an author may make to support a claim and present an argument? How will the analysis of texts prepare students to write arguments?
Cycle 6	How can we structure writing group protocols to maximize the potential for peer feedback to support the writing process?
Cycle 7	How can we foster an inquiry or evaluative stance on writing? How can we support students to move beyond spelling errors and provide feedback on ideas, organization, word choices, and other traits?
Cycle 8	What is voice in writing? How can we support students to discover voice in others' writing as well as express voice in their own writing?

for a variety of ancillary interests that were sometimes shared and often varied between teachers. For example, some teachers were interested in issues of pacing, classroom procedure, writer's notebooks and portfolios, selecting texts, setting up learning stations, and planning opportunities for a variety of types of independent and shared reading and writing. These and other foci were addressed often, and participants gained insight into each of their interests, yet the shared learning goals for the team are listed in Table 1.

Materials for lesson planning included district-adopted curricula, books, novels, teacher-created materials, and artifacts. Texts included articles, speeches, editorials, videos, music, art, and literature. The texts used with students ranged in tone, complexity, text type, and genre as well as in the authors' backgrounds, ages, and points of view.

Participants and Settings

Four of the five participating teachers were female and one was male. Each taught middle school English language arts. They were all Caucasian and aged between 25 and 40 years. A call for volunteers was sent via e-mail to a mailing list of local teachers who had attended local affiliate National Writing Project workshops. These five participants each volunteered for the lesson study project. In an effort to cast as wide a net as possible, the selection process was primarily based on interest and administrator support for release time.

Each of the five teacher's classrooms was in a separate district surrounding an urban area in Northern California. Talia and Rachel taught eighth grade in urban districts with culturally and linguistically diverse students from low-income communities. Laura and Elizabeth taught seventh grade in suburban, affluent districts with primarily English-only students. Gary taught sixth grade in a small rural school district. Most of Gary's students were bilingual native Spanish speakers. The five settings, some up to an hour and a half apart, were a unique advantage in this study. The diverse settings provided opportunities for teachers to observe each other teaching in classrooms and communities that varied widely in community and student demographics. All names of schools, communities, places, and people are pseudonyms.

Data Collection

Data for this study were drawn from a three-year lesson study project that spanned from 2008 to 2011. As the participant observer, qualitative researcher, and author of this article, I collected a wide variety of data between 2008 and 2011 as well as data from follow-up interviews in spring 2013.

My primary units of analysis were the processes of pedagogical reasoning and action (Shulman, 1987) that emerged from studying the nature of participants' engagements in the lesson study model. I defined pedagogical reasoning and action

according to Shulman's articulation of the way a teacher shifts from comprehension to new comprehension through transformation of subject matter into instructional sequences and through engaging in ongoing evaluation and reflection. I selected this focus based on the situative analytic methods suggested by Lemke (1997) in his ecosocial systems model, where he suggested that the primary units of analysis are not things or people but processes and practices. Lemke's views on situated cognition theory posited that an ecosocial system includes not only humans in their situated physical environment but also the social practices, meaning relations, and all interactions between humans and their material ecosystems.

My focus on participants' pedagogical reasoning and action also included a widened lens through which I studied how participants' processes and practices connected to the features of the lesson study model. By foregrounding and detailing participants' engagement in a process of pedagogical reasoning and action, I sought to describe how this lesson study model afforded opportunities for teachers to make pedagogical shifts and, as such, develop their knowledge base for teaching writing and literacy more broadly.

To capture and describe these processes, I recorded extensive field notes from my observations of participants' behavior as they interacted with each other, their settings, and the materials of the lesson study project. I also audiotaped and transcribed all participants' discussions throughout the planning stages, observations, debriefing meetings, and lesson revisions. I triangulated these data with e-mail communication, pre- and postlesson study cycle interviews, and written reflections from each participating teacher at the end of each lesson study year. I also collected and analyzed a wide variety of data from all teacher-created materials, the curriculum resources that were used in participants' lesson designs, and the samples of students' work that teachers evaluated after each observed lesson.

Data Analysis: Five Phases

Each of the following five phases of data analysis involved the process of data reduction by transforming raw data into summaries, reflective memos, and data display charts. Data display charts served to "organize key ideas that allowed for conclusion drawing and verification" (Miles & Huberman, 1994, p. 11). By deciding what things meant, noting regularities, patterns, explanations, and connections, I incorporated the following strategies into my data analysis procedures to ensure the quality and internal validity of the data: (a) checking for representativeness, (b) checking for researcher biases, (c) triangulating across data sources and methods to confirm emerging findings, (d) getting feedback from participants via "member checks," and (e) examining the "unpatterns" in the data by following up on surprises that emerged along the way and investigating the meaning of outliers (Miles & Huberman, 1994).

Through the constant comparative method, I systematically inspected the data and constructed and reconstructed my developing theories (Merriam, 2003). I es-

tablished a threshold for trustworthiness through my prolonged engagement with the project, regular member checking, and the ongoing comparison of data (Lincoln & Guba, 1985). Each of the five phases of data analysis is described separately for the purposes of clarity, but they often overlapped.

Phase 1: Unpacking and coding pedagogical reasoning and action. First, I organized all documents and discourse data for each lesson study cycle into nine data sets—one for each lesson study cycle. Next, I unpacked the construct pedagogical reasoning and action according to Shulman's model and collapsed the descriptors into three coding categories: (a) transformation, (b) instruction and evaluation, and (c) reflection. I combed through each of the nine data sets and coded and categorized instances of pedagogical reasoning and action. I created data display charts to organize the data into three categories according to the following descriptors:

1. *Transformation*. This included preparation and/or negotiation of materials, resources, artifacts for teaching, and designing instruction and adapting to specific students. Transformation codes also included selecting strategies, lesson design, and adapting and tailoring to student characteristics.

2. *Instruction and evaluation*. I coded instances when participating teachers tried out new approaches in practice and coded instances of teachers' evaluation of materials, instructional strategies, and student thinking. Furthermore, these codes included instances when teachers checked for students' understanding during the teaching event.

3. *Reflection*. I coded instances of teacher reflection on the lesson, student learning, teacher self-reflection, and the appropriation of practices from the lesson study. Coding instances of reflection included teachers' verbal reflections during the lesson study cycle as well as written reflections.

After Phase 1 coding, there was substantial evidence that pedagogical reasoning and action occurred throughout every feature of the lesson study: collaborative topic selection, lesson planning, observations, and debrief. In fact, there was not a single cycle of lesson study in which no instance of pedagogical reasoning and action occurred.

Phase 2: Identifying teacher pedagogical shifts. After Phase 1, it was clear that each of the nine cycles of lesson study contained features of teacher pedagogical reasoning and action. Therefore, in Phase 2, I coded each of the nine lesson study cycle data sets again for clear instances of shifts in comprehension for each teacher. According to Shulman (1987), the process of pedagogical reasoning and action begins with comprehension of purpose, subject matter structures, and ideas within and outside the discipline. The processes of transformation, instruction, evaluation, and reflection support the shift toward a "new comprehension of purposes, subject matter, students, teaching, and self through the consolidation of new understanding and learning from experience" (p. 15).

Once I was able to locate clear instances of shifts from comprehension to new comprehension, I confirmed the shifts with member checks. From these data analyses, I arrived at a preliminary hypothesis: Pedagogical reasoning and action, which involved shifting toward new comprehensions, was situated in the context of the lesson study features. This hypothesis formed the basis for the next phase of data analysis.

Phase 3: Situating pedagogical shifts within the lesson study. In Phase 3, I traced connections from the processes of pedagogical reasoning and action, which included the shifts in comprehension, to the contexts in which these processes were situated. For example, during lesson planning meetings, there was much attention to analyzing and adapting materials and negotiating and selecting instructional strategies. During the observation debriefing meetings, there was much attention to both evaluating the instructional strategies used in the lesson and evaluating and analyzing student thinking.

I used the analytic induction method, which involved selecting a tentative hypothesis and testing the hypothesis against instances of phenomena. As the phenomena appeared to support the hypothesis, I tested further instances of phenomena against the hypothesis until the hypothesis was adequately supported by data (Merriam, 2003). My hypothesis was that the features of the lesson study afforded opportunities for pedagogical reasoning and action, which include the shifts in comprehension. This phase of data analysis revealed clear connections between lesson planning, observations, and observation debriefing meetings and the process of pedagogical reasoning and action.

Phase 4: Locating themes across teacher shifts. I used the constant comparative method to determine themes across the instances of teacher shifts. I compared the nature of the shifts for each teacher and the context within which each shift evolved. Through this stage of constant comparison, the data across each of the participating teachers revealed that all participating teachers broadened and integrated their writing pedagogy. They each shifted away from a notion of writing as an isolated set of skills and toward a broadened notion of writing as a process of critical thinking, which is further detailed in the findings section.

Phase 5: Follow-up interviews two years later. In the final phase of data analysis, I conducted interviews with each of the five teachers to confirm shifts and assess the degree to which pedagogical shifts were sustained and generative.

Findings

The following research questions guided this study: (a) How, if at all, does a practice-based learning model afford opportunities for pedagogical reasoning and action? (b) What, if any, pedagogical shifts did teachers make and sustain beyond the lesson study? Each of these questions is discussed the following sections.

How Did the Lesson Study Design Afford Pedagogical Reasoning and Action?

Each of the lesson study features has been recognized by the literature on teacher professional development as an effective feature of professional development models, for example, collaborative lesson planning, observation, and analysis of student learning. Each lesson study feature involves analyzing materials, analyzing student thinking, building shared knowledge, and iteratively applying new knowledge to practice. Excerpts from interchanges between teachers as they negotiated teaching and learning writing throughout the lesson study cycles illustrate how the lesson study features afforded opportunities for teachers to engage in pedagogical reasoning and action. Although there was much overlap between the features of the lesson study, the following sections illustrate how the four features of a lesson study design—collaborative lesson planning, observation, data analysis, and reflection—each contributed to new knowledge construction for participating teachers.

Collaborative lesson planning. Each lesson study cycle began with a topic selection and centered on a focal question. As they designed each lesson, participants gathered all of the resources they already had on the subject, including published curricula, teacher-created lessons, and books on the subject. Many of the resources teachers brought to the planning meetings were from previously attended professional development workshops where participants had deemed the information valuable yet had not had the opportunity to apply their learning in practice.

To illustrate how the collaborative lesson planning process supported pedagogical reasoning and action, the following examples were drawn from a cycle of lesson study focused on teaching voice in writing. Participants wanted to support their students to understand how writers use language to communicate their purposes to different audiences across topics and in various contexts. The issue of author's voice became a focal topic, and participants negotiated both the meaning and applications of voice for writing. Voice is recognized as a critical quality in writing (Elbow, 1973; Fletcher, 1993; Graves, 1983). According to Romano (2004), "voice is the writer's presence in a piece of writing" (p. 21). Investigating voice was part of understanding writing as a more global and abstract endeavor—beyond the word and sentence level and into tone, mood, and the impact of writing on the reader. This topic was particularly challenging for participants, and they negotiated the meaning and application of voice in writing. Often when time ran out during a planning session, a conversation continued into e-mail. This exchange began in a lesson study planning meeting and continued through e-mail for several weeks before being brought back into the next planning meeting. This abbreviated interchange illustrated how teachers' engagement in the analysis of materials supported their early comprehension of teaching and learning voice for writing:

> ELIZABETH: So . . . voice is how students are saying what they say, a combination of diction, tone, mood, and authors' unique style, right?

> LAURA: In the book They Say, I Say, it says, "Your voice + their voices = A conversation of ideas that is meaningful." . . . Voice is *what* the students were saying too . . . authors put their voice in their work in the form of their analysis because in their analysis they aren't just restating the evidence, but explaining it through their own lens. At the same time, I feel there is room for voice even when there is no analysis.

> RACHEL: I do think voice is both the how authors say *what* they say and what they are saying as well. That is something I've always struggled with—getting my students to express their own ideas and not try to emulate my ideas or to produce what they think I want them to say.

> LAURA: I think you could have two papers that score high that demonstrate an equal level of insightful reading and interpretation but one could exhibit voice and one could simply be perfunctory.

This exchange reflected a process of pedagogical reasoning and action that included the critical interpretation of texts, materials, and subject matter (Shulman, 1987). This process is also an integral feature of lesson study. According to Lewis et al. (2012), "the first part of lesson study is *kyouzai kenkyuu* (study of teaching materials), to examine what is currently known about the teaching and learning of a particular topic" (p. 370). The collaborative planning feature of lesson study supported the teachers to make decisions about materials for lesson design. The transformation of materials into lessons further involved selecting instructional strategies tailored to the students in the classroom (Shulman, 1987). The following interchange illustrated this process through an e-mail exchange and into a lesson planning meeting:

> ELIZABETH: I love the idea of students investigating authors' voice by looking at a variety of ways voice is linked to purpose, audience, and context. I found a lesson through NCTE which does this. My students really benefit from using visuals and multimodal activities. . . . We could think of ways to help kids see how voice is connected to different characters, purpose, audience, and context.

> TALIA: Why not plan a hybrid of Laura's lesson . . . and maybe use some music, or do a read-aloud or some acting . . . and then the gallery walk activity Rachel did for persuasive writing. . . . It was so active and kids were really enthusiastic . . . we can post pieces of writing on the walls and students can read the piece of writing, discuss the audience, purpose, context for the writing, and then analyze the voice, the word choices . . . [talk about] the impact . . . and write their answers together.

The lesson planning process created opportunities for participating teachers to select topics, negotiate meaning, and prepare materials and artifacts for instruction. During these sessions, participating teachers built shared understandings of constructs such as writing groups, peer feedback, critical thinking, teaching voice, and the many ways to approach teaching through a variety of modalities. As they

engaged in the observation of lessons and the evaluation and analysis of student thinking and learning in action, participating teachers further shifted in their understandings of these and other constructs in teaching and learning the English language arts.

Observation, data analysis, and reflection. Throughout the 3-year lesson study, teachers participated in nine observations and observation debrief meetings. Observation debriefs typically involved analyzing student work and various forms of observation notes and artifacts from the lesson. Frequently in follow-up meetings, participants brought in student work from the same or adapted lessons that they taught individually before or after each observation. In each of the meetings, teachers evaluated and analyzed the strategies, content, and focus of the lesson and attended to student thinking and learning. Lewis et al. (2012) described this as "looking beyond a single correct answer in order to understand misconceptions or extensions in abstract reasoning" (p. 370).

Attention to student thinking is a central feature of professional development further supported by Whitcomb et al. (2009), who suggested that

> the growing consensus that professional development should focus on students' thinking and learning is not surprising. . . . Professional development programs should help teachers learn how to elicit and interpret students' ideas, examine student work, and use what they learn about students' ideas and work to inform their instructional decisions and actions. (p. 209)

In the following interchange, participating teachers were engaged in pedagogical reasoning, which was characterized by their evaluation and analysis of student thinking after observing a lesson on teaching voice in Elizabeth's classroom:

> GARY: The whole class discussion was the best part of the lesson. [Reading from his observation notes] When you asked, "How do you know that the authors were passionate, emotional, etc.?" your kids said stuff like, "Tone, word choice, imagery, vivid details, descriptive language, specific evidence, strong verbs, sentence variation."

> ELIZABETH: I was so impressed that my kids discovered similar qualities for voice as the literature without being told what it was. . . . I wanted [students] to discover voice . . . to find it naturally, organically . . . on their own without being given a handout telling them this is was voice is.

This exchange illustrated teachers' evaluation of and reflection on the lesson. The immediate debrief of each observation afforded opportunities to evaluate student learning and reflect on the connections made between teaching and learning. At the end of the final year of the lesson study, Elizabeth explained her most significant learning experiences from the lesson study:

> ELIZABETH: I felt like I didn't know what it [voice] was. . . . If anything, I was taking students' voices away by squishing it with all of the academic stuff. . . . In

the end, the students really taught me that I can learn *with* them sometimes and they really helped me see that just because I am not completely sure about a topic doesn't mean I shouldn't teach it—sometimes if I can put it out to them as a question for investigation, *I* can learn something just from trying it out.

The topic voice was of compelling interest to Elizabeth, and she persevered to understand it for longer than a year. As participating teachers investigated topics of interest to them and to the literature on teaching and learning writing, they made significant pedagogical shifts. Participants learned how to challenge and support English learners, how to engage students in collaboration, and how to challenge them to think critically for and about writing; each is detailed in the next section.

Pedagogical Shifts

Pedagogical shifts for each teacher were clearly instantiated. The theme that characterized all five teachers' shifts was away from the view of writing as the isolated teaching and learning of "rules" concerning spelling, punctuation, and the structure of sentences or paragraphs and toward the view of writing as an integrated communicative process that included analyzing visual and multimedia texts, speaking, listening, and unpacking a variety of language types, functions, and uses. Teachers' integrated views also involved their understanding that thinking for and about writing included analyzing texts in connection with genre, audience, purpose, and context—notions that are supported by much of the research on teaching and learning writing (Hillocks, 1999, 2003; Huot, 2002; Johns, 1997; Lattimer, 2003). Participating teachers' shifts resulted from their collaborative investigation into methods that engaged their students in thinking for and about writing through discussion, collaboration, peer feedback, and the analysis of texts. In the following sections, each teacher's pedagogical shifts are described separately to provide detailed, concrete examples and a fuller account of each participating teacher's experiences.

Talia. Talia's most significant pedagogical shift was to engage her students in collaborative writing groups. In a planning meeting early in the first year of the lesson study, Talia shared her concern about engaging her students in peer collaborative writing groups:

I have had the problem before with my English learners—they don't know how to comment and they want the teacher to give the comments. . . . I am afraid putting them in writing groups would just be too hard for them to know what to say to each other.

This comment represented Talia's reluctance to engage her students in peer feedback during the first months of the lesson study project. Weeks later, after seeing Rachel's students engage in collaborative writing groups where they provided feedback to each others' writing, Talia emerged with a new understanding of peer feedback:

I didn't want it to happen at first, because I was afraid the blind would lead the

blind, but . . . watching your kids working in pairs, I think now it might be useful to not give them the restricted scaffold, but to use each other to construct it.

This excerpt illustrates Talia's shifting understanding about engaging her students in collaborative writing. After observing student collaboration in Rachel's classroom, Talia's perspective began to shift. One full year later, Talia appropriated much of what she planned and observed in both Laura and Rachel's classrooms. At the end of the second year of the lesson study, Talia presented a lesson involving her students in writing groups. During the observation debrief, Talia reflected on her students' thinking and learning during the lesson:

They [students] were commenting in both the margins and giving feedback at the end of each other's pieces. I told them they should do this, but we never discussed why exactly they should. Then we reflected on this process and I asked, "What is the benefit of margin comments?" Kids went back to their writing groups and analyzed the end notes and margin comments that they had given each other in order to evaluate the difference between the two. In the end, they decided that margin comments are brief and either ask a provocative question or give a specific change suggestion. . . . They said that end notes are more of a global look at the whole piece. . . . This was fascinating to me, I never thought of it before.

This series of representative excerpts illustrates how Talia progressively shifted away from her early concerns about her students' ability to perform in writing groups. As Talia engaged in the lesson study, she shifted away from her initial concerns about the "blind leading the blind" toward a new comprehension about *how* to engage students in collaborative writing groups. Collaboratively planning, observing, and learning to structure writing groups by trying them out in practice afforded opportunities to engage in pedagogical reasoning and action, which were essential for Talia's pedagogical shifts.

Gary and Laura. The design and ongoing modification of student collaborative writing groups was also significant for both Gary and Laura. Gary presented a lesson to the group toward the end of the third year of the lesson study where his students collaborated in writing groups to provide feedback about the voice each used in his or her writing. Gary expressed that his experience in the lesson study contributed to his new knowledge designing and enacting writing groups. In the following excerpt from a discussion at the end of the lesson study project, Gary discussed the impact of the lesson study team on his learning:

I can honestly say my students have improved as writers this year because of all I have learned from you [the lesson study team]. I would not have been doing writing groups, I would not have been teaching voice. I would not see my students in the way I do. . . . I feel like I have this whole group here to help me and I can say it out loud and try things out.

Gary's pedagogical shift included a new way to involve kids in sharing, discussing, and revising their writing. He stretched his thinking about writing in ways

he had not done before his lesson study experience. By investigating student collaboration and the use of voice in writing, Gary emerged with new knowledge for teaching and learning writing. These activities were a significant shift away from his previous use of writing groups for rote, predetermined feedback criteria, which often focused on punctuation, spelling, and mechanics. This type of shift was also instantiated for Laura, who learned to balance teacher-directed writing instruction with activities that encouraged critical thinking for and about writing. The following excerpt from a written reflection at the end of lesson study illustrated Laura's pedagogical shift:

> In the beginning of the year I started with a very formulaic approach to writing . . . then the students took on that role of the evaluator. I think this was hugely, hugely powerful. I think they don't get enough chances to really think about writing . . . and I think that was a very powerful thing. That was a huge lesson for me. . . . I needed to give them that power, that chance to think about writing. . . . Instead of just telling them [students] what to look for, now I am putting up different models of sentences and I am asking students, "What is the author trying to convey?"—I like seeing what students extract first before we go any further. I will always make this type of critical thinking a part of my writing.

Throughout the lesson study cycles, Laura included more open-ended opportunities for students to choose their own formats to organize their writing by analyzing a variety of text structures. This was a clear shift for Laura away from a teacher-directed approach toward a more inquiry-oriented, thinking approach to teaching and learning writing.

Elizabeth. Similar to Gary and Laura, Elizabeth shifted from a tightly structured approach to teaching writing toward a more integrated literacy pedagogy that included reading, speaking, listening, language use, art, music, movement, and technology:

> Before lesson study, I felt most comfortable with response to literature, but the essays I taught were strictly formulated with a rigid outline. Through the lesson study I have been exposed to and encouraged to present academic writing in more accessible, engaging, and meaningful ways. . . . Now my lessons include gallery walks, art, pod casts, picture books, music, and meaningful group work.

The strategies Elizabeth described were part of her recognition that writing was beyond the text and sentence level—that writing is also about thinking—and that many strategies that support thinking are multimodal and interactive. An emphasis on the multiple intelligences and approaches to teaching to and from a variety of ways of knowing is among the topics that are grounded in research on teaching and learning (Gardener, 2006).

Rachel. Rachel also shared the recognition that kids need opportunities to move, listen to music, view art and other media, and interact in a variety of ways. Rachel stated her concern early in the lesson study that she struggled to provide

opportunities that both challenged and supported her English learners. Early in the lesson study, Rachel communicated her concerns about overly scaffolded writing instruction. Rachel expressed, "I think my kids hit a wall because everything is so structured and sometimes their voice and even their ideas get squashed." Furthermore, Rachel expressed, "My kids [all of whom are English learners] all have critical thinking skills, they need to collaborate and problem solve, but when they come to me it is the first time in their lives that they ever got to do that in school." Rachel sought to balance language supports and thinking challenges throughout the three years of the lesson study, and her quest to do so was evident in nearly every lesson study cycle. For example, in an interview at the end of the first year of the lesson study, Rachel described the pedagogical shifts she had made at that point:

> The more I take away scaffolding, the more they struggle, but I'm OK with that . . . it's going to be a lot of practice—me taking away scaffolding, them struggling, me coming back, and seeing what they're struggling with, and saying, let's try it again. Because I feel if I constantly give them that scaffold, they'll never have the experiences they need, on their own . . . putting it all together on their own.

This excerpt illustrates the shift away from overly scaffolded interventions like sentence starters, templates, and outlines. Rachel progressively designed more opportunities for students to interact with each other and engage various learning modalities. For example, toward the end of the second year of the lesson study, Rachel presented a lesson that was observed by the lesson study team. The lesson challenged her English learners to think critically about the ways authors supported their claims with various types of evidence. Students moved around the classroom in writing groups and engaged in various stations. Each station had a type of text: speeches, works of art, political cartoons, images, music lyrics, editorials, blogs, magazines, and media news sources. At each station, students analyzed the authors' claims and choices of evidence to support the claims. Rachel reflected on why that teaching experience was pivotal for her:

> I wanted them to feel comfortable and free and open and I wanted them to really feel like it is all focused on them—their ideas from exploring and investigating. . . . My modeling strategy was to get kids to get other kids to give their opinions . . . so I went around during the activity and modeled ways to ask for others' ideas. . . . I noticed that my group with three girls and one boy—they were [asking each other] "so what do you think?" and then really listening to each other! That was really awesome.

This excerpt illustrates Rachel's understanding that her English learners needed language support as well as challenging thinking, speaking, and listening activities. Rachel's pedagogical shifts involved the gradual release of tightly scaffolded approaches to teaching and learning writing and increasing her repertoire of methods to promote thinking, sharing, speaking, and flexibility for her students.

Conclusion

Follow-up interviews in spring 2013, two years after the lesson study project ended, revealed that all five participating teachers maintained and/or expanded what they learned in the lesson study. Additionally, during the two-year period after the lesson study, each participant presented ideas generated by the lesson study to outside audiences. In the summers of 2012, 2013, and 2014, Rachel and Laura presented weeklong summer workshops that they aligned to the Common Core State Standards (CCSS) for the English language arts. Their workshops included many of the activities they tested in the lesson study, including student collaborative writing groups and methods to engage students in multimodal critical thinking literacy activities. Since the lesson study, Talia has been actively sharing her knowledge for teaching writing in culturally, economically, and linguistically diverse classrooms with other teachers at her school site. Talia is also a highly respected mentor teacher, as she hosts student teachers from the local university teacher education program. This is evidenced by testimonials provided to me by both her student teachers and the university supervisor who places and observes student teachers in her classroom.

At the date of this publication, Elizabeth's school site, with her leadership, has become a host site for regular teacher professional development workshops around integrating the arts and technology into writing and literacy more broadly. Since the lesson study, Gary has become a principal and continues to not only value collaboration but provide regular opportunities for adapted forms of lesson study at his school site.

It is clear from not only these follow-up interviews but also the plethora of ways that the participants have shared their knowledge with other teachers that their pedagogical shifts were sustained and generative. Each teacher expanded his or her integrated approach to teaching writing by shifting beyond the notion of writing as sets of isolated skills. Their lessons continue to include reading, speaking, listening, and language development through text analysis, gallery walks, music, arts and technology integration, and student collaboration. Laura explained, "When we moved to the CCSS, we did not really have to change much. . . . We want students to be able to go beyond the text and to return to the text—whatever the text may be: print, video, podcast, artwork, song—and to cite evidence to support their claims."

Even though voice is not mentioned in the CCSS for English language arts, all five teachers reported their continued attention to teaching students how to analyze voice in others' writing and how to express their own voices in a variety of ways. The following excerpts from interviews with Elizabeth and Gary illustrate the sustainability of the lesson study process and its promise as a model for developing a knowledge base for teaching writing:

> ELIZABETH: I don't think that I can oversell the impact that the lesson study had on me and my teaching. I am still teaching voice. I connect voice to word choice and sentence variety—and style—those things lead to voice. I still use writing groups—in fact my whole English department uses them now.

The following excerpt from an interview with Gary two years after the lesson study further illustrates this point:

> GARY: My main take-away from the lesson study was that our students need op-
> portunities to think and to write and to write deeply about things they care and are
> passionate about. Standards or no standards—they need to find their voice, not just
> the style of their words or their word choice but the actual ideas behind them. They
> need to be exposed to big ideas, huge concepts, and grapple with how to explain
> their opinions. There isn't a professional development meeting or workshop I go
> to where I don't make a connection back to our lesson study and the importance
> of teachers working together, collaborating, and then reevaluating—together! In
> fact, we've set up our entire professional development calendar to build in as much
> grade-level collaboration as possible.

These interviews, two years later, uncovered that participating teachers sustained an interest in the topics they investigated in the lesson study, for example, student collaborative writing groups, multimodal activities to encourage thinking for and about writing, and supporting students to understand and find their voice for writing. Furthermore, these findings suggest that practice-based collaborative inquiry models, like lesson study, afford opportunities for teachers to engage in pedagogical reasoning and action. These processes and practices afford opportunities for teachers to make the types of pedagogical shifts necessary to support all students to thrive in school. Top-down information transfer models on their own have limited deliverables. Practice-based models, conversely, have the potential to maximize opportunities for teachers to investigate how to teach and, in the process, make powerful and lasting pedagogical shifts.

Discussion

In the current age of new standards, for example, the CCSS, the Next Generation Science Standards, and revised state standards for English language development, there is a clear need to design effective teacher learning contexts. Moreover, if these new standards are to have a positive impact on students, teachers must learn how to facilitate students' participation in classroom activities and discourses that reflect the practices of each content discipline (Hakuta, Santos, & Fang, 2013; Lee, Quinn, & Valdes, 2013). Teachers will need relevant and authentic opportunities to learn how to foster the use and development of students' linguistic resources for learning and for demonstrating learning (Bunch, 2013). Additionally, adopting the CCSS in diverse school settings includes learning how to challenge and support students with special needs and students who identify across multiple special education and other categories (Constable, Grossi, Moniz, & Ryan, 2013).

With or without new standards, the challenge facing teacher education and professional development is considerable: to design contexts that afford opportunities to engage in pedagogical reasoning and action. Attending a class, a webinar,

training, or even a workshop that includes a high level of active participation is valuable for teachers. In these types of transmission models, high-leverage pedagogical shifts are *advocated*. However, to *make* such pedagogical shifts, practice-based models offer a clear advantage. No matter the foci of any particular teacher education or in-service professional development program, the intended outcomes are the same: to afford opportunities for teachers to make the pedagogical shifts necessary to advance student learning. Findings from this present study suggest that practice-based teacher professional development models hold great promise for making lasting pedagogical shifts and for incorporating pedagogical reasoning and action into the daily practices of teachers.

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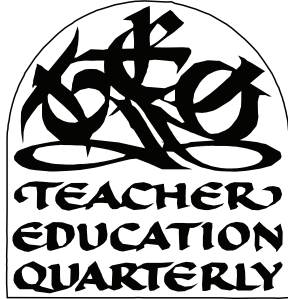
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