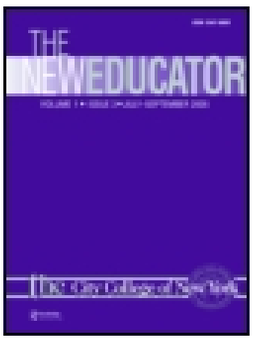

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Exploring Inquiry in the Third Space: Case Studies of a Year in an Urban Teacher-Residency Program

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ABSTRACT

Using case studies, we describe what happens from novice to apprentice when preservice teachers learn to teach in an urban teacher-residency (UTR) program with a focus on inquiry. Our UTR operates within a "third space" in teacher education, seeking to realign traditional power relationships and to create an alternate arena where the roles of the university, school, teacher candidate, and community can be reimagined. This third space encourages preservice teachers to be inquirers themselves in order for them to support their students as inquirers.

Introduction

Preservice teachers face many challenges, including requirements to plan and teach, actions they attempt while they are learning about them. They are urged to critique the taken-for-granteds of their own firsthand successful educational experiences. The contexts in which they are learning to teach are frequently mired in time-honored, traditional practices. How, then, do these soon-to-be teachers challenge their own learning beliefs and, simultaneously, act in ways that run counter to prevailing modes of teaching and learning of more experienced colleagues and mentors? How do they shift their identities and begin to see themselves as teachers of inquiry?

Addressing these issues, this article describes what happens when preservice teachers learn to teach inquiry in an urban teacher-residency (UTR) program that opens a "third space" (Klein et al., 2013). UTRs have emerged in response to critiques of traditional teacher education and alternate route programs as being too disconnected from teachers' experiences and not providing adequate theory to those learning to teach in some of the most challenging contexts (Berry, Montgomery, & Snyder, 2008). Residents (as the preservice teachers are called) apprentice in classrooms with mentors (our name for classroom teachers) for a full year (Solomon, 2009) and simultaneously complete university coursework.

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Coursework and training are geared toward preparing residents for the specific district in which they are teaching, and early research indicates higher retention rates for residency graduates than for graduates of other traditional and alternate route programs (Papay, West, Fullerton, & Kane, 2012; Solomon, 2009).

In 2009, with the support of a 5-year Teacher Quality Partnership Grants from the U.S. Department of Education, we designed the Newark Montclair Urban Teacher Residency (NMUTR) to meet the needs of our partner school district, building upon a decades-long partnership and various collaborative school/university models such as professional development schools (Goodlad, 1988; Levine & Tractman, 2009; Rutter, 2011; Teitel, 2003, 2004). In this article, we focus on the secondary cohort, one of two strands of the NMUTR, which has been designed to prepare math and science teachers. While sharing some of the features of other UTRs, the NMUTR is distinct in its mission to create and operate within a "third space" in teacher education (Zeichner, 2010), seeking to realign traditional power relationships and to create a reimagined arena where the roles of the university, school, teacher candidate, and community. Tightly integrating theory with daily classroom experiences, coursework takes place on site at schools and involves an emergent curriculum that builds from residents' classroom experiences.

In this study, we ask the following:

- What are the experiences of residents in an urban teacher residency when inquiry is the focus of teacher education in the third space?
- How do they undergo a shift in identity as they envision themselves as urban teachers of inquiry?

Conceptual framework

The third space

The concept of "third space," drawing from cultural studies, postcolonial theory, and geography (Bhabha, 1994; Moles, 2008; Routledge, 1996; Soja, 1996), refers to a space that is located between dualities, an arena that combines the features of the two, formerly separate domains, through dialogue with one another and in such a way that an entirely new territory is constructed, one that is fundamentally different from either individual domain. In the third space of the NMUTR, faculty, mentors, community members, residents, and students share and construct knowledge and cross customary role boundaries. Our interactions are not limited by rigid hierarchical parameters; rather the "third space" becomes "a place of invention and transformational encounters … (Bhabha, 1994)" (Routledge, 1996, p. 406).

With its tolerance for entities that are dynamic, ambiguous, ever-shifting, and multiple, the third space is well suited for the nonlinear process of supporting residents as they allow new identities as inquiry teachers to emerge. Questions of "how to be," "how to act," and "how to understand" (Sachs, 2005) from the perspective of a teacher of inquiry are explored safely and without judgment. In this "community of practice" (Wenger, 1998), residents "try on" the identities of "learner/inquirer" and "teacher/inquirer" without having to name themselves as such.

Shifting teacher identity to inquiry in the third space

A third space seems ideal to promote the emergence of a teacher identity that embraces the principles of inquiry. Much of the recent literature on teacher education emphasizes the importance of teacher identity on teacher development (Beauchamp & Thomas, 2009; Beijaard, Meijer, & Verloop, 2004; Freese, 2006; Hoban, 2007; Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; Olsen, 2008; Sachs, 2005). Teacher identity is consistently discussed as dynamic and impacted by internal factors such as emotions (Rodgers & Scott, 2008; Van Veen & Sleegers, 2006; Zembylas, 2003) and external factors such as contextual experiences from work and life (Flores & Day, 2006; Rodgers & Scott, 2008; Wenger, 1998). These more poststructural feminist constructs of identity (Britzman, 1994; St. Pierre, 2000; Weedon, 1996) have emerged in response to what Jackson (2001) describes as the critique of "the notion of a predetermined, unified teacher identity assumed to emerge if a novice assimilates and follows the already-organized, complete path of the student teaching experience" (p. 386).

We were interested in developing an identity where "how to be," "how to act," and "how to understand" teaching in an urban school (Sachs, 2005) were based in constructivist- and inquiry-based notions of teaching and learning. In this framework, learners are invited to explore their questions and to make meaning for themselves. In inquiry, we share the authority of the asking, the process, and the end products (Weaver, 1990). Our understanding of inquiry also resonates with science educator, Windschitl (2008) who explains that inquiry involves students explaining how the world works and then testing those models "against evidence derived from observation and experiment" (p. 2). Key to this is that the intellectual work is in students' hands who develop and ask questions of genuine interest to themselves. We agree with Windschitl when he writes that too often science teachers treat "supporting activities" of inquiry like cookbook labs and teacher-led demonstrations as inquiry itself. Because both a third space and inquiry recognize that "knowledge is dynamic, ever changing, multiple … not static" (Taylor & Otinsky, 2007, p. 70), together, they form a rich context to nurture teacher identities with transformed beliefs and actions.

To practice inquiry in a third space, all stake holders are invited to shift their identities to be both problem posers and problem solvers (Dewey, 1916; Freire, 1970). Within this context, the traditional hierarchies of teacher education are dismantled and no longer do the university faculty hold the most decision-making power. Engaging as coteachers and colearners, the faculty, mentors, and community representatives model inquiry for the residents. In response, the residents have firsthand experience of being inquirers in a dialogic community. With support from the NMUTR stake holders, they translate their own experiences into practices that allow their students to think as inquirers who do not make unsubstantiated claims but rather question, investigate and justify.

Operationalizing inquiry in the third space to shift teacher identity

In the third space, we see inquiry as multilayered, where residents inquire into their own experiences as learners, their teaching practices, and student learning, as they simultaneously construct their identities as teachers. Actions can often influence or precede the development of identity and beliefs about teaching and learning (Guskey, 2002; Opfer & Pedder, 2011) and we sought to create structures that would support an identify shift towards what Ball and Cohen (1999) refer to as a "disposition of inquiry." This disposition includes "the situation of oneself that would support their generation of multiple conjectures about an issue in practice, their production of alternative explanations, and their efforts to weigh them rationally" (p. 27). Below we describe one core practice in the NMUTR, which demonstrates these attempts. Mirroring the third space structure of the program where faculty, mentors, and community representatives make decisions together about admissions, curriculum, and assessment, the NMUTR curriculum is emergent, generated collaboratively with residents, there are some non-negotiable topics, such as the practice of inquiry. Because the residency curriculum is enacted on site in the schools and is part of a "third space," the curriculum, the precise order of topics, and the means for investigating them grow directly from the learners' questions, which, in turn, are derived from their daily practices with their mentors and students in the classroom (Boomer et al., 1992). As well, the "university" classroom is the primary school site in the district. Finally, "third places" (Oldenburg, 1989) like the School of Conservation, the Newark Museum, the Casa De Don Pedro, and the Bolden Student Center were used for meetings with residents and mentors, reminding all involved that this program was an opportunity for everyone to act both as experts as well as inquirers. For example, when residents expressed a need to see their own students inquiring into issues from the subject area, we decided to provide a direct experience. We coplanned and coled an "inquiry cycle" with our residents. With the mentors' support, the

cycle occurred in a chemistry classroom and began with high-school students having the opportunity to "wonder and wander" (Short & Harste with Burke, 1996) about connections between chemistry and their lives. Questions that emerged included queries such as "Why do my feet stink?" and "Why do we fall in love?" Students formed topic-based small groups to explore these questions. Residents were support teachers but were able to observe faculty facilitating the kind of classroom that we had been advocating them to enact. From there, we met weekly with the class to develop a research plan, to collect data, to engage in analysis, to draw conclusions, and, finally, to present findings. With a limited amount of chemistry content knowledge and uncertainties about teaching in this particular context, faculty modeled a stance of being both an inquirer and a facilitator of inquiry. We did not position inquiry in opposition to direct instruction. Rather, we emphasized that inquiry-based teaching involved opportunities for students to explore, to discover, and to make meaning within an environment scaffolded by the teacher. As students begun to theorize ideas for themselves, teachers played the vital role of naming concepts, clarifying misconceptions, and extending ideas through direct instruction. We stressed that inquiry-based teaching is not laissez faire but requires teachers to listen intently to their students and to differentiate their instruction to support the needs of individual learners (Short et al., 1996). This represents one of the formal opportunities we created for building the "disposition of inquiry," for shifting their identities, and for teaching in the third space.

There are other examples of how we operationalized third-space teaching. For example, much of the curricular work we did around classroom management and discourse emerged from the use of the protocol—the Reformed Teaching Observation Protocol (RTOP, based on the Arizona RTOP; Pilburn et al., 2000) in resident observations and instructional rounds. When using this protocol, geared towards inquiry-based math and science teaching, mentors, faculty, and other residents would begin by scripting the observed lesson. The "data" produced during these observations would later dictate the curricular objectives and also become the basis for our curriculum, providing text for making sense of student–teacher discourse, classroom management, and "science talk." This was how we were both able to meet the needs of the residents at the time that they arose and to prepare them with the content required for graduation; we knew which issues would need to be addressed over the course of the year of a preservice teacher, but we were able to wait for those moments to arise organically instead of imposing them at a predetermined and often perhaps less relevant time. Opening a "third-space" curriculum meant a number of things: (a) The curriculum was emergent; (b) the curriculum constructors were the residents, the faculty, the mentors, the high-school students, and the community; and (c) the district school and the community were the "spaces" where learning occurred.

Methodology

This study was designed using a qualitative, interpretive case-study methodology, which allowed for the in-depth study and rich description needed to investigate, to analyze, and to represent complex phenomena such as teacher learning and belief change in a nonreductionist, holistic way (Merriam, 1998, 2009; Stake, 1995). Case-study design also supported the nature of our inquiry because "case studies are the preferred method when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (Yin, 2009, p. 1). Researchers included three faculty members and two doctoral students. Faculty were participant researchers in that they took notes on meetings and their experiences piloting the program but did not have access to formal resident data (such as interviews) until after residents graduated from the program. Doctoral assistants collected the data.

Participants

The participants for this study, Jason, and Pauline, were drawn from the pilot year of the NMUTR's secondary math and science program (Klein et al., 2013), which involved only four residents. Early analysis found a common pattern of development between Pauline and another resident. We chose Pauline as the representative case as she seemed to better articulate those themes. The fourth resident was excluded from this article because she did not complete the program. All four residents were placed in the same setting, a large ethnically and racially diverse neighborhood urban high school serving nearly 2,000 students.

Data collection

To inform our case studies, we collected data over the course of 2 years from multiple sources to examine phenomena from various angles as well as provide opportunities to triangulate findings. Data sources included the following:

(1) Formal observations using the Reformed Teaching Observation Protocol (Pilburn et al., 2000). This observation protocol was developed by Arizona Collaborative for Excellence in the Preparation of Teachers and is geared towards inquiry-based math and science teaching.
(2) Three semi-structured open-ended interviews at critical points in the school year. Interviews were conducted by one of two doctoral

assistants. Interview protocols were semi-structured and questions were focused on four main themes: "Understanding My Own Learning," "Understanding Others' Learning/Urban Youth and Communities," "Engaging in Communication, Collaboration, and Community," and "Demonstrating Resilience, Resistance, and Persistence."

(3) Field notes and scripted observation notes, collected by doctoral graduate assistants as well as by faculty researchers, including general observational notes and descriptive and analytic memos (Miles & Huberman, 1994).

(4) Weekly reflections by residents regarding a classroom "critical incident" on an electronic discussion board, various course assignments, and e-mail correspondence.

All residents agreed to participate in the research study and signed consent forms allowing researchers to collect data from their coursework, although data analysis did not begin until after graduation.

Data analysis

To explore participants' paradigm shift, we analyzed data with respect to our research questions. Data were analyzed by the constant comparative method (Glaser & Strauss, 1967) through both an iterative and collaborative process. We reviewed interview transcripts, notes and memos, observations, critical incident reflections, assignments, and e-mail/text correspondence separately using a discovery and coding approach (Bogden & Biklen, 1998). We each recorded emergent themes and connections to theory over several readings, discussed preliminary impressions, and collaboratively organized our ideas into larger categories or themes (Strauss & Corbin, 1998). We then plotted our broader categories and corresponding evidence by case, allowing us to envision a more holistic portrait as well as to make comparisons across cases.

Resident narratives

Below are narratives that describe how two UTR residents developed their individual identity as inquiry teachers in a third space. Specifically, we focus on Pauline, a biology resident, and Jason who teaches chemistry. Borrowing from narrative inquiry, we have chosen to write these as stories rather than traditional case studies. Our narratives illustrate a process of becoming, that is, individual, temporal, contextual, and nonlinear (Claudinin & Connelly, 2000). We consider the residents' identity shifts not as occurring in isolated moments but rather as happening over time and drawing upon past, present, and future learning experiences. Narratives help us demonstrate the individual and

nonlinear nature of becoming an inquiry teacher; each resident uniquely moves backward and forward toward shifting beliefs about teaching. Using a similar format for each story, we descriptively interweave data to highlight the residents' backgrounds and placement, early understandings of inquiry, and later shifting beliefs about what it means to be teachers of inquiry.

Pauline

A product of traditional urban schooling

Pauline, a Cuban/Haitian female from a working-class family attended a large urban school in the same geographic region as the NMUTR partner high school in which she served as a resident prior to becoming a resident. She self-described as a product of traditional urban schooling, what Haberman (1995) calls "the pedagogy of poverty." A successful high-school student, she excelled at rote learning, or in Pauline's words, "sitting and studying… I basically memorized everything" (Pauline, #3, p. 3). Pauline was placed in an eleventh-grade biology classroom.

Inquiry as a student-centered activity

Pauline's early conceptions of inquiry were as activities—alternatives to lecture but still teacher centered. Rather than an overarching pedagogical framework, inquiry was understood as a strategy to keep students happy and thereby maintain classroom management: "I think the most important thing in the classroom is to be creative and keep the students as interested as possible, no matter where the students come from. Hands on activities are key…" (Pauline, #1, p. 2). Her understanding of inquiry was a way of keeping students engaged and busy, rather than about meaning making or building knowledge. Pauline saw activities incorporating inquiry as an incentive to participate and act appropriately: "The kids didn't mind learning science when it was a fun activity, but when it got theoretical or dense, the kids would rebel a little… there was no incentive" (Pauline, #1, p. 2). This suggests creative, fun activity cannot be incorporated with theory building, that there is a balance the teacher must walk in order to maintain student interest. This dichotomous mindset rather than a third-space orientation where both fun and deep theoretical thinking could be incorporated to create a new kind of learning would follow one throughout one's development in the program.

Reframing one's past as a learner: Trying inquiry

Early on, Pauline's traditional schooling experiences became an intellectual and emotional challenge for her. The faculty-modeled inquiry in the NMUTR courses, which led to initial resistance on her part. Pauline shared, "I was a little resistant because you know, that's not the way I'm used to learning. I'm used to learning the very traditional way" (Pauline, #3, p. 1). As

she moved through the program, she reflected on her prior learning experiences during class meetings and critical incidents. Gradually, by identifying her traditional schooling as the cause of her reluctance to fully engage in inquiry as learners, she was able to name the challenges of becoming an inquiry teacher.

As she better understood her resistance, she saw herself in her students and began to reframe her traditional schooling as an impediment to authentic learning:

> In the beginning I really thought of teaching as the teacher holds all the knowledge and the student is there to take all the knowledge in whatever way the teacher presents it. But now, realizing that that's not necessarily the best way to learn because of, I remember going to college and not remember certain things even though I was taught it, so not wanting my students to experience the difficulties I experienced (Pauline, #3, p. 1).

This is a recurrent theme throughout Pauline's interviews—knowledge that her own learning experiences had not paid off for her and that the traditional, didactic learning experiences of secondary and higher education had been insufficient to provide her with deep understanding of science content: "Another thing they asked us in the beginning of the year, they asked us about our subject and what do you like most about your subject, or what is the underlying principle of it, and I couldn't think of one underlying idea that could express how I felt and I think that's a lot to do with the way I was taught it" (Pauline, #3, p.2). Pauline's learning experiences in the third space as she developed her identity as an inquiry teacher served to demonstrate the effectiveness of inquiry on a personal level, which she later transferred to her practice. In her midyear interview, Pauline expressed her new understanding of inquiry as making connections and contributing to deeper learning:

> I feel like if I had been introduced to [content] in an inquiry-based way, it would have given me a deeper understanding of it…when I was able to connect a concept to something real, I would remember it… when I'm doing my lessons I try to keep that in mind and try to say what's a good way of explaining this, or in real life (Pauline, #2, p. 2).

Once she began to understand the benefits of inquiry to the learner, Pauline inquired into her teaching practices. For Pauline, this led to a realization of the power of learners as active constructors of knowledge. In a critical incident post from early March, Pauline explained what happened when students saw a connection between genetic mutations and the comic book characters of the X-Men: "I allowed the students' questions to guide the class lesson… some of the questions were wacky, such as 'Can a person really be like Spiderman?' … this prompted a class discussion about genetic mutation… it also sparked a great idea for the next lesson" (Pauline, Critical Incident, March 2011).

Positioning herself as a teacher inquirer provided Pauline with opportunities to problematize her practice, complicating the ideal conceptions of teaching that beginning teachers tend to bring into the classroom (Kagan, 1992; Korthagen, Loughran, & Russell, 2006; Veenman, 1984). For example, Pauline grappled with a common tension between teaching for inquiry and the bureaucratic requirements of schools, such as covering a set curriculum or preparing students for standardized tests (Lipman, 2009; McNeil, 2009). She explained, "I have embraced the ideology behind constructivism but am still searching to find a middle ground between constructivism and curriculum based teaching…. it bothers me to think that I might have to compromise some things for others." Realizing the value and importance of inquiry, she tried to find a third space in between teaching practices that did not compromise her evolving beliefs but also satisfied demands placed on her by the school district. Inquiring into her thinking and decision making in the moment enabled Pauline to learn "in, from, and for practice" (Lampert, 2010, p. 21). In these incidents, she understood and worked through the complexities of teaching as "students of teaching" (Dewey, 1904). Yet, she still conceptualized teaching for inquiry as an either/or experience—either students were prepared for the state-mandated exams *or* they were critical thinkers and problem solvers. Rather than embracing a third-space orientation that would allow her to both teach for inquiry and meet the state mandates, this dichotomous thinking continued to dominate her understanding of inquiry.

Although Pauline began to shift her teacher identity to embrace the dance of inquiry, the process was by no means linear or uncomplicated. She fought tendencies to slip into transmission models of teaching with which she had been raised, despite her best efforts to abandon them. In her exit interview, Pauline commented on her own awareness of subconscious resistance, reflecting that, "[e]ven though I was promoting the idea of students' agency with their work and the way I constructed my lesson, I still had traditional aspects of teaching within my own teaching." Yet, at the end of the year, she was still conflicted as to how to resolve inquiry with the state-mandated curriculum and testing, repeating again, "I am still in search of a way that inquiry and covering the curriculum could work in my classroom. This really bothers me when thinking about my future in education" (Pauline, #3, p. 4). This perceived irreconcilable tension left her identity in flux: She was neither able to fully "become" the teacher of inquiry she believed would best serve her students in the future nor, with continuous reflection on her own practice, in good conscience could she continue to teach as she was taught. She was in a third space, a state of becoming without clear resolution.

Inquiry teacher identity as advocate

As the school year ended, questions of equity and social justice in a larger educational context began to weave through Pauline's conceptions of inquiry. Pauline recognized inquiry teaching as a form of advocacy, a way to foster personal agency in her students: "I want the way I teach to be an escape from traditional teaching, to have students have some type of agency in their learning because they don't experience that as much as students from a suburban environment" (Pauline, #3, p. 4). She initiated a shift in understanding of teaching from a traditional, transmission conception to a third-space model of coconstruction: "In the beginning I really thought of teaching as the teacher holds all the knowledge and the student is there to take all the knowledge in whatever way the teacher presents it… . I now see teaching as… a kind of dance between the students and teacher to construct the knowledge together." Her early, automatic sense of identification with her students became a deeper form of identification, where Pauline began to see her advocacy for her students' rights to learn as a social-justice issue.

As she moved into her first year of teaching, Pauline continued to attempt to bridge her students' lives to the curriculum:

> Well, a lot of times when I'm teaching just any concept, whether it's forensics or biology with certain things like stem cell research, I like to always try to have the students think about the role that these things play in their lives, because I think that it's important to realize that they can have ideas about these topics, and that they can voice their ideas about them, and that they will affect them eventually. And I try to set my room up as an environment where everyone can give their opinions about things. Like in my forensics science class, I had an assignment where you know, they had to write an essay, either for or against the legalization of drugs, and you now, some students took a certain stance, and they basically took the knowledge that was presented in class and kind of extended it and used some of the examples of the things they have witnessed and I think that if you are keeping the whole mind frame of social justice keep in mind having students bring in their experiences into the classroom and making it relevant to them" (Pauline, #3, p. 5).

By providing her students with opportunities to inquire about issues that were relevant and interesting to their lives, Pauline's classroom became a third space that drew from what Moje et al. (2004) describe as a combination of "the 'first space' of people's home, community, and peer networks with the 'second space' of the discourses they encounter in more formalized institutions such as work, school, or church" (p. 41). In her example above, students developed a perspective about the legalization of drugs based on their research as well as their own lived experiences and articulated it through formal school discourses.

Finding a third space: Shifting inquiry to meet the needs of students

Pauline continued to explore what it meant for her to be a teacher of inquiry. Rather than qualifying her teaching as either inquiry or traditional, she began

to recognize the value of understanding her inquiry teaching along a continuum in a third space in the middle. Toward the end of her first year of teaching, she reflected the following:

> The main challenge … this year was kind of like, in the beginning of the year … I had my idea of how I wanted to run my class, and … how I wanted to do inquiry based lessons. I still thought of inquiry as very broad, and trying to incorporate it along with the curriculum based learning, and that was a challenge for me, because I realized that I couldn't do both all the time. It really was challenging. So how do I infuse what I have learned as good teaching into the classroom, when I have all these outside forces telling me, well you are not doing this and you are not doing this… But I started to like put my foot down, and I started by trial and error, trying to incorporate inquiry into my lessons, even if it was just an introduction to the lesson or the way that I ended a lesson. So, I tried to find a medium" (Pauline, #3, p. 2).

Her commitment to finding a middle ground for her teaching is evident in the following two examples, which were scripted in the same lesson on DNA base pairs. Early on in the lesson, Pauline had students create models of DNA in order to better understand their composure. In the following typical one-on-one student–teacher dialogue, we see her directly guiding a student through the process of the activity:

Pauline: So what are the 4 parts of the nucleotide you need?
Student 1: Phosphate group
Pauline: And?
Student 1: Nitrate group
Pauline: Right. So you need those for each part and you are going to build this strand.
Student1: So we take this apart?
Pauline: Yes, you can actually do it here… (demonstrates).
Student 1 starts pulling colors out to form the strand.
Pauline: And how are you going to… Go to page 12. Look what the phosphate is doing.
Student 1: The phosphate group then goes up to the…
Pauline: It does but in this case it's paper so how would you connect it?
Student 1 shows Pauline how she is assembling her model.
Pauline: And what are the phosphates doing?
Student 1: Connecting.
Pauline: Right. So is your phosphates group connecting your DR [deoxyribose] group? So make it look like they are connecting. OK, look at this picture right here…look at the gray and tan.
Student 1: Oh, I get it. They are connecting.
Pauline: Right. The phosphate is acting like the glue.
Student 1: So without them they wouldn't connect.

At that point, Pauline left the student to work collaboratively with her peers. The group proceeded to engage in the next part of the process. Pauline's questioning had helped this student and his peers to make the necessary connections they needed to continue forward.

In another more independent small group, the students did not need Pauline's direct guidance initially. Three students worked together to create DNA strands. They were able to scaffold the learning for one another. Pauline only intervened later on when she saw that the students in this particular group needed to move forward. Her encounter with them was brief as she simply pushed them to the next step of the activity:

Student 3 and Student 4 are creating the model as Student 1 gives them directions.

Student 1: Now separate the two strands, and we are done.
Student 4: Should we leave this like this?
Student 3: I think…
Student 4: So it would be purple?

Student 1 guides them in starting the next strand.

Student 1: The next one would be green…

Student 3 and Student 4 create the next strand of white squares with black ones in between.

Student 3: Should we do opposite colors?
Student 1: The next ones would be…
Student 3: Green.
Student 1: And then
Student 3: Yellow.
Student 1: Yellow.
Student 3: Two yellows.
Pauline: OK S. Now you created the double strand of DNA! Good job. What is number 7?

Student 3 reads number 7.

Student 3: Constructing a complementary strand.
Pauline: So what does that mean you are going to do?
Student 2: We are going to make a separate one that's the same.
Pauline: So you are going to simulate, you are going to act like DNA membranes, your hands are going to act like…you are going to create a complementary strand for each. So you guys take this strand, you guys take this one, and let's see you can do the complementary strand the fastest.
Student 4: More fun!
Pauline: Let's see who can do the fastest!

Student 2 directs Student 3 in creating the new strand.

Student 2: Red, yellow, yellow, green, green.

Student 1 directs Student 4 in creating the complementary strand.

Student 4: So you are doing what we are supposed to be doing, and we are doing what you are supposed to be doing.

Student 3: So we do the opposite?

Student 1: No don't worry about it. They already started.

Here we saw Pauline inviting students to demonstrate their understanding of the concept of the DNA strand and its complement with some scaffolding and questioning and instructions to push them forward.

Sometimes the "dance" we saw meant that Pauline engaged in more structured inquiry where the teacher needed to scaffold experiences to support students as they engaged in inquiry. As she moved towards inquiry-based instruction, Pauline wanted students to create their own lab procedures; they had to decide which and how much materials to use as well as which steps to take. However, this particular lab provided procedures and students used these to launch their investigation, to observe the reaction, and to make connections to their learning in regards to the roles of DNA (storing, transmitting, and copying information). Pauline found that her students enjoyed themselves immensely during this lab, and, at the end, nearly everyone was able to make connections to the "big idea" on her assessment. Pauline reflected that she had not realized how "stressed out" designing their own labs made her students; not only was it challenging to create the procedures, but, if a step was incorrect, they would not end up with a product. Through dialogue and reflection, Pauline realized that her classes needed scaffolds to reach the level of designing their own labs and asserted that she would factor this into her labs in the future. We saw the ways that Pauline's understanding and ability to "do" inquiry relied on the teaching context and the needs of the students and shifted all the time.

At the end of her first year of teaching, Pauline came to the conclusion that it did not make sense for her to dichotomize her teaching framework. She reflected:

I was just having a conversation with my mentor about how I think of myself …

> I'm going to be a good science teacher, I am going to incorporate inquiry, but you know, I don't think of it like that anymore. I think of it like I'm going to be a good teacher, and a good teacher is preparing my students for the outside world, whether that is critical thinking, being able to solve a problem, being able to analyze, and it just so happens I'm using science as that subject… And, I'm not sure I developed that understanding of what teaching is, or what the educational process is between teacher and student until the end of the year… . Like them knowing about mitochondria is not necessarily important. Them understanding how to make sense of information is more important. And so that's what I think

> good teaching is … promoting critical thinking and autonomy, through learning (Pauline, #3, p. 4).

Her conclusion is interesting as it demonstrates her need to have a more fluid adaptable definition of good teaching—one that crosses boundaries and responds to a variety of important complexities that impact the classroom. In some ways, our emphasis of inquiry in the program was perceived as a narrowly defined rigid entity that was in opposition to a more traditional transmission model. As we watched Pauline develop her teacher identity, we were reminded of the importance of presenting a third-space model of inquiry that is itself under construction and becoming (rather than fixed).

Jason

In a state of becoming

From even the admissions process, we had some reservations about Jason, a White working-class male with a military background; however, we focused on his strengths. During a one-week summer intensive course, we were particularly struck by his presentation of self as someone in a conscious and continual state of becoming. This was very much aligned with the program's beliefs about nurturing inquiry teacher identities in a third space. In sharing his educational autobiography, he revealed his struggles as a high-school student, the role that his military service had played in maturing him, and particularly the role his girlfriend had in helping him to be more self-reflective and self-critical. He was vulnerable, affectionate, and supportive of his peer colleagues, all of whom were women.

Breaking the traditional paradigm: Shifting to inquiry through chance and opportunity

Jason was placed with a high-school teacher who taught a combination of general, honors, and Progressive Science Initiative (PSI) chemistry. His mentor, Jorge, was an experienced teacher who had come to teaching through an alternate certification route. One of the most significant challenges of implementing the NMUTR has been finding mentors who have strong relationships with students, share our vision of inquiry and math and science school reform and are a part of a school community that embraces our work. This was part of why both Jason and another resident were placed with Jorge. Research (Bullough et al., 2003; Nokes, Bullough, Egan, Birrell, & Hansen, 2008) suggested double placements could be beneficial to residents (and we have since had great success with placing two residents with one mentor), but there were concerns about Jorge's understanding of inquiry. Although Jorge was open to implement inquiry-based practices, his teaching was largely traditional: He transmitted knowledge to his students, he relied

on quizzes and tests for assessing student understanding, and he was unable to provide much support for the residents' third-space inquiry pedagogy. While he seemed open to learning about new approaches to teaching and learning, he did not have enough experience to coach Jason in inquiry.

Decades of research in teacher education have documented that we teach how we were taught (Lortie, 1975). Moreover, adherence to traditional teaching is reinforced by success as a student, and it is not surprising that initially Jason had difficulty understanding both what inquiry was or that it held promise for learning chemistry. During a midyear interview, he talked about his own schooling and how that affected his approach to inquiry:

> I'm from this traditional background where everything is crammed down your throat and you just have to study, that's how I went through school, so I'm trying to figure out how to reach these goals without just directly giving them information, and it's really difficult to set it up, that environment… it's still difficult not to teach directly, and it's what I seem to fall back on" (Jason, #2, p. 3).

Finding evidence for the efficacy of inquiry was also a challenge. With no models to draw from and no setting in which to observe inquiry in action, Jason became frustrated: "It's quite a struggle to believe something when I can actually have proof that it worked another way, and I don't mind trying another way but it's difficult to change my beliefs when I have evidence proving otherwise." Compounding Jason's difficulties was the fact that his mentor could not model inquiry practices. In his midyear interview, he said: "[My] mentor needs more training with a constructivist background. It's very hard to push the envelope with a constructivist background if the mentor isn't familiar with it." At this point, his frustrations with both the faculty and the program were deep.

Jason needed evidence that meaning making was both possible and important and that students could, without direct instruction, construct essential concepts in chemistry; since he could not figure out how to plan instruction from this perspective, he became stuck. However, the third-space orientation of the program encouraged the faculty to comfortably lead an inquiry project with Jason's chemistry students. And his participation in and observations of this endeavor had a profound impact on him. With some hesitation, he began to become more open to testing out a more student-centered approach to teaching. In a sense, he became willing to try on the new identity of an inquiry teacher. It was not a conscious decision on his part; rather, his learning trajectory in the third space was a combination of chance and opportunity. In the following critical incident, Jason relays an incident that was entirely spontaneous, but that gave him the experience and the confidence to deliberately construct ways for students to develop their own understandings in their own language:

> We were having a class discussion and I felt like the room was getting a bit uncomfortably hot. I went to open the window and a student told me not to open it, because it would frizz up her hair. I immediately changed direction of the class discussion towards the chemistry behind why her hair would become that way. The class seemed more engaged in discussing this, and by the end of the class I overheard her mention that today was the first day that she learned something in chemistry and liked it (Jason, Critical Incident, March 2011).

Jason stumbled onto a connection between students' questions and motivation. The next step for him was to understand how students could be motivated within chemistry so that a teacher does not have to stretch the discipline to create meaning and relevance for students.

Armed with this experience, Jason began to conceptualize how students might construct ideas about chemistry through exploration. In another critical incident, he describes what happened when he gave over the meaning-making process to students intentionally:

> I had put up some data for the students to interpret on their own, and the things they started extracting from the data were way different than what I had intended. They started talking about the colors of the different atoms, the proportions of atoms to each other based on their name, what the names meant, and several other things. Indulging in their questions made the class a lot more interesting, and by the time they were done with all their questions, they had solved most of the content mysteries before I even started to cover it myself (Jason, Critical Incident, April 2011).

Although Jason still thought of this as "indulging" students, he did see how fruitful student meaning making can be. He took a risk and allowed his teaching to exist in a third space between his traditional notions of what learning should look like and his fairly new observations of how effective student-centered learning could be. His key insights were that, not only were students making sense of the concepts in chemistry but, without his telling them what the essential ideas were, the students found them by themselves through the activity he created. Here he addressed one of the central concerns he had about inquiry as practice: How would students learn the big ideas if he did not tell them what they needed to know?

Lesson planning and revision as another pathway to change

It is not surprising that given the pressure on Jason to create student-centered instruction and his reluctance or inability to do that he would leave his lesson planning to the last minute. In preparation for an observation in early March, for example, Jason did not begin to plan or communicate with his university mentor about his lesson until the Friday evening preceding a Tuesday observation. Over the course of the weekend, even though he and his professor exchanged about 20 e-mails about the upcoming observation, it was not a completely fruitful exchange. In one e-mail that weekend,

the mentor wrote, "There is a consistent approach that you use. It is naming and counting, and applying in a lockstep fashion the procedures you have given them examples of" (Onore, personal communication, March 2011).

Nonetheless, Jason made some progress with his lesson plan that weekend. The RTOP from that observation indicates that Jason managed to create opportunities to develop the students' critical thinking by planning activities that required his students to make predictions and find patterns. However, he short circuited their critical thinking by analyzing and summarizing their findings for them. He was more focused on information and answers than thinking. In fact, when a student put her answer to one of the problems on the board, the class "discussion" centered on whether students agreed or disagreed with her. There was no attempt to explore why they might agree or disagree, what evidence they might have for their findings, or how they had come to the conclusions they found.

But a marked change took place over the next few months, both during and after the university professor-led inquiry project. While that project was concluding, Jason began preparing a lesson plan for another formal observation by his university mentor. This time, in contrast to the last-minute planning for his March observation, Jason initiated an e-mail dialogue with her during which they exchanged more than a dozen e-mails focused solely on brainstorming ideas for the lesson. He began by throwing out possibilities and asking for a response. Only after sharing a number of different ideas did he begin to formulate a lesson plan and to create materials for that lesson. Uppermost in his mind was building on the faculty-led inquiry project. He realized that he could use one of the project topics—what causes stinky feet—as a way to help the students to understand chemical bonding and his mentor enthusiastically supported this decision.

In the lesson plan he prepared, he well went beyond using the topic as a starting point. He actually asked the members of the "stinky feet" group to lead small groups on the problems he gave them to solve. Using the students as experts represented several leaps for him. Not only was he privileging student knowledge but he was also demonstrating his belief in the capacity of his inner-city students of color to think critically and deeply about chemistry. Compared to the beliefs he had expressed during the summer internship, this unconscious repositioning of student knowledge and authority was striking.

His new orientation toward teaching and learning continued. Jason decided to create an integrated unit of study for the final weeks of the term, building on the work he had begun with the inquiry project and continuing into the lesson described above. Moreover, he wanted to tie his action research into this unit. In the outline he created for this unit, he regularly used terms like "predicting" and "conceptual understanding." In addition, he constructed a rationale for each day of the unit. In the outline he wrote, "the purpose for doing this is," "the significance of this," "the

relevance of this," and so on. That he was thinking about meanings and not topics represented a new orientation to curriculum and new ways of conceptualizing chemistry. It was no longer a list of topics to be covered but had become a set of interrelated ideas.

Not only did this unit plan represent thinking about chemistry in chunks of meaning and big ideas but it also provided Jason with a way to yoke together the individual lessons, an entirely different way to plan instruction. The very contours of his thinking had been altered. In the more than 20 e-mails he initiated with his university mentor, the substance of his assertions and questions were entirely different. At one point, for example, Jason concentrated on figuring out what analogies he can use to help students think about the difference between electron domain geometry and molecular geometry. He wanted students to be able to understand that some chemical reactions cannot be observed. But he wanted them to develop that understanding, a fundamental tenet of chemistry, through having an experience of this phenomenon. His newfound orientation to teaching chemistry gave new meaning to the discipline for him.

Throughout these e-mails he explored a variety of ways to help students experience chemical reactions. He offered them for his mentor's reaction. He brainstormed new ideas and continued to explore activities and approaches until he settled on one. The point of describing Jason's process in this detail is to emphasize that his fundamental understanding of the epistemology of chemistry was changing in and through the planning process as he focused on developing student understandings rather than on the transmission of information. It is not surprising, then, that the lessons that resulted had inquiry at their center.

Jason's new science teacher identity

Our vision of a third space for nurturing an inquiry teacher identity was not fully realized in Jason's case. He lacked opportunities for an apprenticeship in inquiry with his school-based mentor. Nonetheless, his professors were able to play more prominent roles in planning and implementing instruction than they might have in a more traditional teacher-education program. They were able to work with Jason in multiple ways to support his development of new practices in teaching and learning chemistry and new attitudes about his students' capacities. As is clear from Jason's culminating action-research project, his vision of his first year of teaching goes well beyond a picture of inquiry as an activity to inquiry as a way of teaching science, a new teacher identity:

> The main goal of my curriculum will be to teach science by doing science. The students should have the internal mindset of a scientist by the time they are out of my class. I want them to be questioning everything that can be questioned. They are already thinking those questions, but voicing them requires a lot of practice and confidence. This needs to be nurtured in the classroom first before it can happen on its own… . (Jason, #3, p. 3).

Discussion

From inquiry as activity to inquiry as knowledge construction

Over the course of the year, residents developed a number of conceptions of inquiry. There was no clear linear development from Point A to Point H, but richer, more sophisticated notions of inquiry (i.e., inquiry as meaning making or as advocacy) *were* interwoven with the more simplistic ones towards the end of the year. Initially, residents considered inquiry as a "fun, hands on" way to engage students as opposed to the traditional transmission model of teaching. As they became more aware of their own experiences as inquirers, they began to slowly consider new understandings of inquiry. Inquiry became a means of "making connections," "deepening understanding," and "constructing knowledge collaboratively." We understand these conceptions will continue to be constructed as their teacher identity develops but we believe the foundation for these beliefs were nurtured in a program that emphasizes inquiry in the third space.

The interplay of belief and action

There is some debate in the field of education about what should drive change in teacher identity and teacher practice (Opfer & Pedder, 2011): Should teacher educators seek to alter teachers' beliefs in the hope that belief change will influence actions? Or should we encourage teachers to make changes to their practice in the hopes that successful new practices will in turn change beliefs about teaching and learning (Guskey, 2000, 2002)? We believe change is most likely to occur when "learning activities have a conceptual and practical coordination or coherence across programs and activities" (Opfer & Pedder, 2011, p. 390). Because the third space blends theory and practice, for our residents, action and belief change happened simultaneously. From opportunities to learn through inquiry, our residents internalized the cycle of questioning, investigating, and reflecting, and inquiry became a way of knowing for them. These cycles, followed immediately by transferring that learning to the classroom, by reflecting, and by modifying their teaching practices, facilitated deepening understanding and allowed residents to live theory in the immediate.

One theory about the struggles that our residents have had in developing their inquiry identities is that they did not have enough opportunities to engage in action—theorizing and the acting were not linked together tightly enough. Residents need multiple and sustained opportunities to act, to reflect, and to act again early in the program, particularly if they are in a shared placement. We have significantly increased such opportunities in our residency curriculum and initiate them as early as the second month of

school. However, we also recognize there are intangibles that act as obstacles such as the resident's level of commitment and desire to learn and change.

The epistemology of inquiry: Constructing and reconstructing knowledge

This recursive cycle of learning and teaching promoted inquiry, valuing the continual construction and reconstruction of knowledge by all members of a third space. Through a variety of experiences, residents began to realize knowledge was not fixed or separate from the knowers themselves, but that it had the potential to be constructed and reconstructed by many different stake holders, including their students. During the faculty-led inquiry unit, residents were intrigued to observe students develop questions for themselves and to carefully construct and carry out an investigative action plan. This shifting understanding of an inquiry epistemology that values students' knowledge construction was also apparent in Jason's spontaneous classroom discussion about frizzy hair, described earlier.

Reimagining of teacher identity

As residents experienced a firsthand reconceptualization of teaching as inquiry, they began to reimagine their own teacher identities; rather than seeing themselves as transmitters of knowledge, they began to see themselves as facilitators of investigation, as problem posers, and intermediaries in student meaning making. For example, Pauline originally discussed her resistance to being part of a program that emphasized inquiry and the coconstruction of the curriculum. Midway through, she was able to name that resistance as being a product of urban schooling that emphasized passive transmission of knowledge. By association, she had assumed the role of teacher in this dynamic—one where the teacher doled out information to the student, occasionally creating "fun" activities that passed as inquiry. Changing practice involved a reimagining of identity—to coknowledge constructors instead of knowledge purveyors. The "dance" Pauline described earlier and the agency she wanted students to develop (and her own awareness of her role in this) are pieces of this emerging identity. The third space supports this reimagined identity as it is premised on the belief that traditional hierarchies and roles are fluid.

Conclusion and implications

We believe there are a number of implications for teacher education, some specific to our work in the residency but some generalizable to the work of teacher education. Although this study included a very small sample size of a grant-funded program, currently two of the authors are engaged in using the

findings of a longitudinal study of the program to reorganize the entire Masters of Arts in Teaching (MAT) program in the department of secondary and special education at their university. Thus, the implications we discuss below are some we are currently involved in implementing at a larger scale but require more research in order to better understand how these changes will influence the professional year of preservice teachers.

Arguably, the most significant implications of our third-space work go to the very heart of teacher education. An unspoken but powerful regularity is the impact of externally imposed and internally accepted notions of time. Assumptions about the linearity of growth and learning are embedded in our schedules and time frames; semesters and school years imply that knowing takes place in increments circumscribed by the institutional calendar. Likewise, the hierarchical nature of educational organizations also contributes to disrupting the natural flow of learning, through its separation of knowledge by rank and role. A third-space orientation to teacher education goes a long way toward addressing the spatial context: Who is present to participate, what their participation looks like, how decisions are made, and ways in which the benefits of knowledge exploration and construction can be equitably distributed.

The implication for teacher education, we believe, is the need to alter our expectations and practices to acknowledge the dynamic, nonlinear nature of learning to teach. To the extent that our work can recognize that new teachers need to know everything at once, that the contexts in which they learn—classrooms and schools—do not easily lend themselves to step-by-step learning and teaching, but that we still must choose to do some things before or after others, we will have moved in the right direction. For example, as we move towards implementation of this in our larger MAT program, we are thinking about using a third-space framework to both involve the mentor and preservice teachers in constructing the curriculum with us. We are also developing curricular strategies that support both being responsive to the preservice teachers' needs while at the same time addressing essential objectives that are non-negotiables in the curriculum to effectively prepare them.

Another implication from our work centers on the importance of collaborative ventures in inquiry. The significance of the faculty-led chemistry class was not lost on us as a means of shifting the dialogue and we wonder about the role of further moments of collaboration around inquiry. As a program, we are increasingly experimenting with instructional rounds, for example, in order to facilitate shared moments of practice that can then be deconstructed collaboratively to be better understood. These have been some of the most productive and rich professional conversations we have had with all participants in the third space. These moments seem to have the most influence on the enactment of inquiry—perhaps because it is in these third-space moments of action-reflection-action that there is the potential to

disrupt the customary boundaries of role and responsibility. Again as we move to "scale" from the smaller residency to a larger MAT program, we are experimenting with using instructional rounds throughout the professional year, recognizing the impossibility of conducting rounds with 25 students in a single class. Instead, we may require smaller groups each week to take a turn at rounds—in mentor classrooms and later in peer classrooms—knowing that not all 25 students will have the same experience, but that, by the end of the professional year, all students will have had some of the same experiences.

A final implication focuses on the complex development of a teacher's identity as an "inquiry teacher." Preliminary data from the second year of this study that follows Jason and Pauline into their first year of teaching suggest that, in fact, something did shift in their sense of themselves as teachers. They often expressed frustration at feeling they "couldn't go back" to traditional teaching—that it was no longer an option for them, even though they felt it would be "easier." Although our study confirmed our belief that becoming a teacher is not a linear process, some shift in identity from "traditional" to "inquiry" teacher seems to have been made for them, but what exactly precipitated these shifts and when the shifts occurred is difficult to tease out. As we have moved into the induction phase of the residency we are reminded again and again that not only is the third space a constant construction and reconstruction but so is teaching as inquiry; it is a process that is always ongoing, negotiated, and in a state of becoming. We were reminded of this continual need of teachers (new and old) to be both inquirers and teachers of inquiry. Pauline and Jason, in their first year of induction, have requested opportunities to continue to conduct action research and to engage in intellectual conversations around professional texts of interest and relevance to their teaching. They have expressed how much they miss the mindful engagement in which they were involved during the residency year and they yearn for chances to visit classrooms, to discuss observations, and to reflect on their practices, something that has had a profound impact on how we think about the induction of teachers, as well as the professional development of mentor teachers (see Taylor & Klein, 2015). If this is true, then perhaps teacher education exists in a third space where it is never finalized as well; instead, we are faced with a vast terrain—a pedagogy of becoming (Deleuze, 1994; Pinar, 1998). Teacher education is not simply a launching event but it should be constituted as a continual third space where knowledge is shared and developed, where expertise is engaged and grown, and where learning as inquiry is always at the center. This shift too must help us to broaden our investment in teachers and to redefine when we begin and end the process of teacher education.

References

Ball, D., & Cohen, D. (1999). Developing practices, developing practitioners: Toward a practice-based theory of professional development. In G. Sykes & L. Darling-Hammonds (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 30–32). San Francisco, CA: Jossey-Bass.

Beauchamp, C., & Thomas, L. (2009). Understanding teacher identity: An overview of issues in the literature and implications for teacher education. *Cambridge Journal of Education*, *39*(2), 179–189. doi:10.1080/03057640902902252

Beijaard, D., Meijer, P., & Verloop, N. (2004). Reconsidering research on teachers' professional identity. *Teaching and Teacher Education*, *20*, 107–128. doi:10.1016/j.tate.2003.07.001

Berry, B., Montgomery, D., & Snyder, J. (2008). *Urban teacher residency models at institutes of higher education: Implications for teacher preparation*. New York, NY: Center for Teaching Quality.

Bhabha, H. K. (1994). *The location of culture*. London, UK: Routledge.

Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research for education: An introduction to theory and methods* (3rd ed.). Boston: Allyn & Bacon.

Boomer, G., Lester, N., Onore, C., & Cook, J. (1992). *Negotiating the Curriculum*:

Britzman, D. P. (1994). Is there a problem with knowing thyself?: Toward a poststructural view of teacher identity. In T. Shanahan (Ed.), *Teachers thinking, teachers knowing: Reflections on literacy and language education*. Urbana, IL: National Council of Teachers of English.

Bullough, R. V., Jr., Young, J., Birrell, J. R., Clark, D. C., Egan, M. W., Erickson, L., & Welling, M. (2003). Teaching with a peer: A comparison of two models of student teaching. *Teaching and Teacher Education*, *19*, 57–73. doi:10.1016/S0742-051X(02)00094-X

Claudinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. San Francisco, CA: Jossey-Bass.

Deleuze, G. (1994). *Difference and repetition*. New York, NY: Columbia University Press.

Dewey, J. (1904). *The educational situation*. Chicago, IL: University of Chicago Press.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of Education*. New York, NY: Free Press.

Flores, M. A., & Day, C. (2006). Contexts which shape and reshape new teachers' identities: A multi-perspective study. *Teaching and Teacher Education*, *22*(2), 219–232. doi:10.1016/j.tate.2005.09.002

Freese, A. (2006). Reframing one's teaching: Discovering our teaching selves through reflection and inquiry. *Teaching and Teacher Education*, *22*(2), 110–119. doi:10.1016/j.tate.2005.07.003

Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY: Seabury Press.

Glaser, B. G., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago, IL: Aldine.

Goodlad, J. I. (1988). School-university partnerships for educational renewal: Rationale and concepts. In K. A. Sirotnik & J. I. Goodlad (Eds.), *School-university partnerships in action: Concepts, cases, and concerns* (pp. 3–31). New York, NY: Teachers College Press.

Guskey, T. R. (2000). *Evaluating professional development*. Thousand Oaks, CA: Corwin Press.

Guskey, T. R. (2002). Professional development and teacher change. *Teachers and Teaching*, *8*, 381–391. doi:10.1080/135406002100000512

Haberman, M. (1995). *Star teachers of children in poverty*. West Lafayette, IN: Kappa Delta Pi.

Hoban, G. (2007). Considerations for designing coherent teacher education programs. In J. Butcher & L. McDonald (Eds.), *Making a difference: Challenges for teachers, teaching, and teacher education* (pp. 173–187). Rotterdam, the Netherlands: Sense.

Jackson, A. Y. (2001). Multiple Annies: Feminist poststructural theory and the making of a teacher. *Journal of Teacher Education*, *52*(5), 386–398. doi:10.1177/0022487101052005005

Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. *Review of Educational Research*, *62*(2), 129–169. doi:10.3102/00346543062002129

Klein, E. J., Taylor, M., Onore, C., Strom, K., & Abrams, L. (2013). Finding a third space in teacher education: Creating an urban teacher residency. *Teaching Education*, *24*(1), 27–57.

Korthagen, F., Kessels, J., Koster, B., Lagerwerf, B., & Wubbels, T. (2001). *Linking practice and theory: The pedagogy of realistic teacher education*. Mahwah, NJ: Lawrence Erlbaum.

Korthagen, F. A. J., Loughran, J. J., & Russell, T. L. (2006). Developing fundamental principles for teacher education programs and practices. *Teaching and Teacher Education*, *22*(8), 1020–1041. doi:10.1016/j.tate.2006.04.022

Lampert, M. (2010). Learning teaching in, from, and for practice: What do we mean? *Journal of Teacher Education*, *61*(1–2), 21–34. doi:10.1177/0022487109347321

Levine, M., & Tractman, R. (2009). *Professional development school pathways to teacher quality in urban areas: Linking PDSs to improve teacher induction and alternate routes to certification*. Washington, DC: National Council for Accreditation of Teacher Education.

Lipman, P. (2009). Beyond accountability: Toward schools that create new people for a new way of life. In A. Darder, M. P. Baltodano, & R. D. Torres (Eds.), *The critical pedagogy reader* (pp. 364–383). New York, NY: Routledge.

Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago, IL: University of Chicago Press.

McNeil, L. (2009). Standardization, defensive teaching, and the problems of control. In A. Darder, M. P. Baltodano, & R. D. Torres (Eds.), *The critical pedagogy reader* (pp. 384–396). New York, NY: Routledge.

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Merriam, S. (2009). *Qualitative research: A guide to design and implementation* (3rd ed.). San Francisco, CA: Jossey-Bass.

Miles, M., & Huberman, A. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.

Moje, E., Ciechanowski, K. M., Kramer, K., Ellis, L., Carrillo, R., & Collazo, T. (2004). Working toward third space in content area literacy: An examination of everyday funds of knowledge and Discourse. *Reading Research Quarterly*, *39*(1), 38–70. doi:10.1598/RRQ.39.1.4

Moles, K. (2008). A walk in thirdspace: Place, methods, and walking. *Sociological Research Online*, *13*(4), 2. doi:10.5153/sro.1745

Nokes, J. D., Bullough, R. V., Jr., Egan, W. R., Birrell, J. R., & Hansen, J. M. (2008). The paired placement of student teachers: An alternative to traditional placements in secondary schools. *Teaching and Teacher Education*, *24*, 2168–2177. doi:10.1016/j.tate.2008.05.001

Oldenburg, R. (1989). *The great good place: Cafés, coffee shops, community centers, beauty parlors, general stores, bars, hangouts, and how they get you through the day* (1st ed.). New York, NY: Paragon House.

Olsen, B. (2008). *Teaching what they learn, learning what they live*. Boulder, CO: Paradigm.

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, *81*(3), 376–407. doi:10.3102/0034654311413609

Papay, J. P., West, M. R., Fullerton, J. B., & Kane, T. J. (2012). Does an urban teacher residency increase student achievement?: Early evidence from Boston. *Educational Evaluation and Policy Analysis*, *34*(4), 413–434. doi:10.3102/0162373712454328

Pilburn, M., Sawada, D., Falconer, K., Turley, J., Benford, R., & Bloom, I. (2000). *Reformed teaching observation protocol (RTOP)*. Tempe, AZ: Arizona Collaborative for Excellence in the Preparation of Teachers.

Pinar, W. (1998). *The passionate mind of Maxine Greene: I am…not yet*. London, UK: Falmer Press.

Rodgers, C., & Scott, K. (2008). The development of the personal self and professional identity in learning to teach. In M. Cochran-Smith, S. Feiman-Nemser, D. J. McIntyre, & K. E. Demers (Eds.), *Handbook of research on teacher education: Enduring questions and changing contexts* (pp. 732–755). New York, NY: Routledge.

Routledge, P. (1996). The third space as critical engagement. *Antipode*, *28*(4), 399–419. doi:10.1111/anti.1996.28.issue-4

Rutter, A. (2011). Purpose and vision of professional development schools. In J. E. Neapolitan (Ed.), *NSSE yearbook* (Vol. 110[2], pp. 289–305). New York, NY: Teachers College Press.

Sachs, J. (2005). Teacher education and the development of professional identity: Learning to be a teacher. In P. Denicolo & M. Kompf (Eds.), *Connecting policy and practice: Challenges for teaching and learning in schools and universities* (pp. 5–21). Oxford, UK: Routledge.

Short, K. G., Harste, J. C., & Burke, C. (Eds.). (1996). *Creating classrooms for authors and inquirers*. Portsmouth, NH: Heinemann.

Soja, E. W. (1996). *Thirdspace: Journeys to Los Angeles and other real-and-imagined places*. Malden, MA: Blackwell.

Solomon, J. (2009). The Boston teacher residency: District-based teacher education. *The Journal of Teacher Education*, *60*(5), 478–488. doi:10.1177/0022487109349915

St. Pierre, E. A. (2000). Poststructural feminism in education: An overview. *International Journal of Qualitative Studies in Education*, *13*(5), 477–515. doi:10.1080/09518390050156422

Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques and procedures for developing grounded theory* (2nd ed.). London, UK: Sage.

Taylor, M. & Klein, E. J. (2015). *A Year in the Life of a Third Space Urban Teacher Residency: Using Inquiry to Reinvent Teacher Education*. Rotterdam: The Netherlands: Sense Publishers.

Taylor, M. & Otinsky, T. (2007). Becoming whole language teachers and social justice agents: Pre service teachers inquire with sixth graders. *International Journal of Progressive Education*, *3*(2) 59–71.

Teitel, L. (2003). *The professional development schools handbook: Starting, sustaining and assessing partnerships that improve student learning*. Thousand Oaks, CA: Corwin Press.

Teitel, L. (2004). *How professional development schools make a difference: A review of research* (2nd ed.). Washington, DC: National Council for Accreditation of Teacher Education.

Van Veen, K., & Sleegers, P. (2006). How does it feel?: Teachers' emotions in a context of change. *Journal of Curriculum Studies*, *38*(1), 85–111. doi:10.1080/00220270500109304

Veenman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research*, *54*(2), 143–178. doi:10.3102/00346543054002143

Weaver, C. (1990). *Understanding whole language: From principles to practices*. Portsmouth, NH: Heinemann.

Weedon, C. (1996). *Feminist practice and poststructuralist theory*. Cambridge, MA: Blackwell.

Wenger, E. (1998). *Communities of practice*. New York, NY: Cambridge University Press.

Windschitl, M. (2008). What is inquiry? A framework for thinking about authentic scientific practice in the classroom. In J. Luft, R. L. Bell, & J. Gess-Newsome (Eds.), *Science as Inquiry in the Secondary Setting* (pp. 1–20). Arlington, VA: NSTA Press.

Yin, R. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, *61* (2), 89–99. doi:10.1177/0022487109347671

Zembylas, M. (2003). Caring for teacher emotion: Reflections on teacher self development. *Studies in Philosophy and Education*, *22*, 103–125. doi:10.1023/A:1022293304065