Creating foundations for collaboration in schools: Utilizing professional learning communities to support teacher candidate learning and visions of teaching

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Abstract
Despite widespread acknowledgment of the power of professional collaboration, the norm in most schools is teachers working in isolation. Our study examined the impact of multiple layers of professional collaboration intentionally integrated into a one-year preservice teacher education program working in two elementary schools. Analysis of 23 teacher candidates’ written reflections, focus group interviews, and classroom observations indicated that supported by collaboration with colleagues, they developed the skills and commitment to teach each student for understanding. Based on our research, we propose a shift in teacher education toward collaborative inquiry about teaching and learning within school/university partnerships.

1. Introduction
Teaching is increasingly challenging, complex, and in need of change. It is challenging due to the increased rigor of the standards set for all students to reach and the level of thinking in which student must engage to be successful in an ever-flattening world (Darling-Hammond, 2010). It is complex given what teachers need to know and do to engage increasingly diverse students in the content and processes across various disciplines. It is in need of change because under the current system too many students are not meeting their full learning potential.

Abbreviations: PLT, Partnership Learning Triangle; PLC, Professional Learning Community; CFG, Critical Friends Group.

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us, “if we want schools to produce more powerful learning on the part of students, we have to offer more powerful learning opportunities to teachers.” (pp. 1013–1014). As is seen in other countries, such as Korea, Singapore, and Finland (Darling-Hammond, 2010), teachers’ professional collaboration has supported teachers as they manage the challenges and complexities of teaching. Internationally, there is evidence that when teachers collectively work on problems of practice, they better meet the needs of all students (Borko, 2004; Darling-Hammond, 2010; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006; Vescio, Ross, & Adams, 2008).

Currently, the norm in the United States is for teacher preparation to include coursework at the university followed by a field-based experience, typically completed by a teacher candidate in isolation with occasional visits from a university supervisor (Bowen & Roth, 2002). It is not uncommon for the mentor teacher to leave the room while the teacher candidate takes over to teach a unit — an experience that Darling-Hammond (2010) refers to as “trial by fire.” Many would agree that this is not the best way to meet each student’s learning needs, or for that matter, the teacher candidates’ learning needs (Ball & Forzani, 2010; Darling-Hammond, 2010; Feiman-Nemser, 2001).

In lieu of this traditional model, many have suggested that teachers and teacher candidates need opportunities for collaborative professional learning (Darling-Hammond, 2010; Louis & Marks, 1998). Ball and Cohen (1999) suggest that it is through inquiring about their practice that teachers develop and improve their instruction in order to positively influence student learning. In our school/university partnership we used joint professional learning among teacher candidates, and their mentor teachers, to support our teacher candidates with developing images of teaching as a collaborative endeavor (c.f. Grisham, Berg, Jacobs, & Mathison, 2002).

The purpose of our study was to examine ways that our unique model involving nested collaborative professional learning communities (PLCs) within a teacher education program led to a) learning for the members school/university partnership and b) refined visions of what it means to be a teacher. Our focus in this article is to report specifically on teacher candidate’s perceived learning and their visions of teaching. We believe it is this group that has the potential to ultimately shift the culture of schools toward more collaboration in order to better meet the needs of all learners.

### 1.1. Conceptual framework

We believe that learning occurs through social interaction, communication, and reflection and that this is true regardless of the age of the learner (c.f. Vygotsky, 1978). This belief informed the design of our school/university partnership which we model in the Partnership Learning Triangle (PLT) shown in Fig. 1. This PLT model represents collaborative learning taking place across the partnership. Each line has a double arrow indicating the reciprocal learning that takes place within groups (teachers with each other, teacher candidates with each other, etc.) and across groups (teachers and teacher candidates, teachers and students, teacher candidates and students, faculty and teacher candidates) as they interact in this collaborative inquiry about learning and teaching. This model breaks down the traditional assumptions about the hierarchical relationships among university faculty, classroom teachers, and teacher candidates and seeks to establish a collaborative mindset that will serve teacher candidates as they develop collegial relationships throughout their careers (Le Cornu, 2005).

Similar to Cohen and Ball’s (2000) Instructional Triangle which shows the interactions among teachers and students around content, the PLT illustrates the interactions among teachers (A), teacher candidates (B), and students (C) around a common area of inquiry (D) employing Ziechner’s call to create structures for bringing academic, practitioner, and community-based knowledge together in the teaching and learning process (2010). In this partnership, inquiry focused on improving students’ learning by collectively studying and improving teaching. The inquiry and collaboration occurred within school- and classroom-based professional learning communities.
characterizing the field-based experiences

The field-based portion of our professional learning model relies on studying the practice of teaching as a means for learning about teaching—an approach referred to as practice-based professional development (Ball & Cohen, 1999; Smith, 2001). This approach engages teachers and teacher candidates in watching student work and collaboratively planning lessons, observing in another classroom, and analyzing and reflecting on teaching similar to the collaborative approaches used in Finland’s teacher education programs (Buchberger & Buchberger, 2004). This kind of learning is relevant to teachers, assisting them with connecting their learning to their own instructional practice (Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003; Murphy & Lick, 2005; Smith, 2001).

Many perceive that in order to be properly prepared, teacher candidates need considerable experience with whole class and solo teaching since they will ultimately be alone in their future classrooms. However, Ball and Forzani (2010) argue that time in the field alone is not sufficient for teacher learning—rather, disciplined inquiry about practice supports that learning. This is confirmed by Johnson (2010) who concluded that it was “carefully supervised apprenticeship experiences whereby students and ‘master teachers’ engage in reflective dialogue” that made the difference, “not necessarily the number of hours of coursework or field experiences,” (p. 28). Campbell-Evans and Maloney (1997), Australian teacher educators, found that teacher candidates participating in extensive professional collaborative dialog in the field and on campus were better prepared than those in a more traditional teacher preparation program.

In response to the findings above, we used a “triad” model for placing our teacher candidates to better ensure that reflective dialog occurred. This model matched two teacher candidates with each mentor teacher creating a three-person team—this is one of the collaborative preservice education models suggested by the literature (Bullough et al., 2002; Goodnough, Osmond, Dibbon, Glassman, & Stevens, 2009). Triads provide opportunities for both the preservice and inservice teachers to engage in highly reflective practice. Bullough et al. (2002) found that triads encouraged the processing needed to refine instruction. This collaboration eliminated the commonly reported isolation felt by teachers (cf. Lieberman & Mace, 2010; Little, Gearhart, Curry, & Kafka, 2003; Lortie, 1975) and has the potential to reignite teachers’ passion for teaching and learning (cf. Buffum & Hinman, 2006). Collaboration and reflection is not the norm in the United States schools. We believe that cultivating teacher candidates’ teaching vision toward collaboration and reflection ultimately benefits the schools at which teacher candidates are later hired (Hammerness, 2003; Lewis, Perry, & Hurd, 2004; Louis & Marks, 1998).

The triad model relies on the related belief that teacher candidates can experience powerful learning from examining student thinking, coplanning, coteaching, and other forms of assisting in the classroom. Teacher candidates engage in disciplined inquiry as they engage in reflective discussions about lessons both planned and observed with their mentor and triad partner. This enables “teacher candidates to learn what they are not ready to do on their own” (Feiman-Nemser, 2001, p. 1016) a stance which aligns with Vygotskian theory of social construction of knowledge and his theory of the zone of proximal development (Vygotsky, 1978).

Although the triads include individuals at different phases in the professional learning continuum (c.f. Feiman-Nemser, 2001), all are able to learn from one another. The teacher candidates are able to learn from the mentor teachers’ experience and knowledge of curriculum and students. The mentor teachers are able to learn from the teacher candidates’ new or innovative methods and technologies as well as learn about effective mentoring. The university supervisors and faculty are able to learn about effective mentoring and partnerships from the mentor teachers and teacher candidates through the collaboration that takes place to support their students’ learning.

While we do not maintain this model meets all the learning needs of any group, we believe engaging in common professional learning provides opportunities to continually refine instructional practice. It can also provide the “connective tissue” Feiman-Nemser (2001) notes is missing across the various phases of the professional learning continuum. The triad structure makes public and facilitates ongoing reflection. The school/university partnership potentially encourages conversations between the university and district/school personnel as they seek a common vision for practice that supports student learning.

We made a concerted effort to develop partnerships with schools that shared our vision of effective practice and where teachers saw themselves as lifelong learners. Once we identified these schools, we clustered teacher candidates and matched two with each mentor teacher creating a three-person team, or triad. It was our belief that triad participants would a) share interest in meeting the individual needs of their assigned students; b) hold a collaborative stance while each team member contributed to learning how to teach in ways that elicited student thinking to further their learning; and c) coplan, coteach, and then collectively and individually reflect on the efficacy of their work. We believed that the triad model would provide for collaborative learning across the school/university partnership that benefited both teacher candidates’ and mentors’ learning while focused on positively affecting student learning.

We believe that our model contributes to professional literature in that it goes beyond the coplanning and coteaching models that have provided powerful learning in the U.S. and Canada through triads and internationally through revisioning coursework and fieldwork connections and providing extensive opportunities for professional dialog. Our model embraces these approaches while also initiating purposeful structures that do not leave collaboration to chance, whether among teacher candidates and the mentors, or among triads and the university faculty. We wanted the triads to have the explicit knowledge and skills they needed to successfully engage in collaborative work rather than some projects where researchers were interested in examining the ways in which classroom collaboration emerged on its own (Goodnough et al., 2009). Described in the upcoming sections are our design principles and further supports for collaboration, which supported successful implementation of this professional learning model that included multiple levels of collaboration.

1.1.2. Design principles

When initiating this school/university partnership, we found it important to reflect on and identify core values on which to base our actions and decisions. These values became our design principles informing both our planning of coursework and fieldwork and our reflecting on the efficacy of the partnership with positively influencing learning. The three design principles include—1) establish professional learning communities (Garmston & Wellman, 1999; Kruse, Louis, & Bryk, 1994; Louis & Marks, 1998; Murphy & Lick, 2005), 2) connect theory and practice (Allsopp, DeMarie, Alvarez-McHatten, & Doone, 2006; Borko & Putnam, 1996; Zeichner, 2010), and 3) elicit student thinking to further learning (Franke & Kazemi, 2001; Hiebert et al., 1997; Minstrell & van Zee, 2003; Pellegrino, Chudowsky, & Glaser, 2001). These principles have been shown to positively influence teacher learning and in some cases, teacher candidate learning. We deliberately used these principles in combination because we believe they offer “powerful learning opportunities” for teacher candidates that will
influence their actions, decisions, and visions of effective teaching (Grisham et al., 2002).

Based on the work of Kruse et al. (1994) and others we established professional learning communities (PLCs) within our cohort that engaged in reflective dialog, deprivatized practice, collectively focused on student learning, collaborated, and constructed shared norms and values. We split the cohort into four- to five-person Critical Friends Groups (CFG) (Curry, 2008). The CFG protocols utilized in these groups encouraged and supported reflective dialog in courses and field-based collaborative sessions that included both mentors and teacher candidates. The triad structure — specifically sharing a common classroom and school — provided the physical proximity that had potential to support deprivatized practice. After-school collaborative sessions provided for common learning through looking at student work or students at work via video clips from lessons, for example. On campus, teacher candidates brought problems of practice to work on in CFGs.

We introduced a Collaborative Lesson Planning Cycle (Fig. 2) based on Japanese lesson study (Fernández, 2005; Watanabe, 2002) to the teacher candidates and their mentor teachers. This professional learning approach centered on attending to student learning through collaboration.

Components of the planning cycle offered foci for monthly after-school collaborative sessions. In one session, teacher candidates brought in student work from a pre-assessment. Discussion centered on making sense of what students already knew and could do and then considering next instructional steps. For another session, teacher candidates co-planned a lesson that they would be teaching and brought the lesson draft to a collaborative session where they fine-tuned the lesson with advice from the mentor teachers and their colleagues. A third session centered on focused observation of one triad’s implementation and debrief of a collaboratively planned lesson. Using a process similar to “video club” (c.f. Sherin, Linsenmeier, & van Es, 2006) staged in a fishbowl, a triad viewed a 10-min segment from a lesson and discussed their observations about their students’ thinking and understanding. Once they completed the debrief, each team member shared what s/he had learned through engaging in the collaborative video viewing and discussion. Then, several mentor teachers and teacher candidates from outside the triad shared what they learned through watching the team engage in this cycle.

Engaging in these professional learning experiences extended beyond the polishing of a particular lesson and included opportunities for examining and refining instructional practice. The purpose across these sessions was to provide teams with protocols and tools to support their ongoing collaboration and to give mentor teachers structures to guide their mentoring of the teacher candidates.

We worked with teacher candidates to establish community agreements that would support collaborative work recognizing that a safe and open climate is needed when constructing and reconstituting beliefs about teaching and learning (Garmston & Wellman, 1999). This was a first step in developing shared norms and values. The agreements clustered under the headings: listen to understand; participate fully; respect others and their ideas; and be collaborative, caring, and professional. Over time, these agreements became norms and values that were further enhanced through common coursework, collaborative projects, and common experiences in the field.

The second design principle for the cohort was to connect theory and practice. Teacher candidates often wrestle with the disconnect between their personal prior learning experiences, their developing understanding of learning theories, research-based practices, and their clinical experience (Allsopp et al., 2006). As instructors, we intentionally integrated field-based assignments in courses. They called for the teacher candidates to engage with students through one-on-one interviews, individual assessments, and small and whole group instruction. These assignments required teacher candidates to “try on” the research-based practices they were learning about through their coursework. We also encouraged teacher candidates to share their “findings” from these assignments with their mentor teachers and, if appropriate, with their students or parents. The intention in broadening the audience was to support teacher candidates in considering the relevance of the practice as well as expose mentor teachers to current research-based practices and their influence on student learning. This also gave another forum for collaboration among the members of the triad. Teacher candidates also completed a quarterly written reflection on the connections between their course-based and field-based learning. The purpose was to provide teacher candidates with the tools they needed to reflect on and grow their instructional practice, becoming continual learners interacting with colleagues and educational research (c.f. Grisham et al., 2002).

The third design principle was to elicit student thinking as a means to further learning. Teacher candidates learned that effective lessons begin where students are, in order to support them developing new and/or deeper understanding. As a result, their actions in the classroom were that of a teacher researcher or ethnographer. Teacher candidates observed and listened carefully to make sense of students’ ideas and conceptions to determine their potential next steps. They encouraged students to engage in discourse with one another as a means to construct understanding. Teacher candidates explored strategies for problem posing and questioning that would draw out student sense making, conjecturing, justifying, and generalizing. This inquiry about student thinking and understanding, as represented in part of the Partnership Learning Triangle (PLT), was the focus for the triads.

1.1.3. Further supports for collaboration

Professional collaboration was the theme of our cohort throughout the yearlong graduate level licensure program. As noted above, establishing PLCs was central to this partnership. As members of a cohort, teacher candidates belong to a cohort-level PLC; through placements in triads they also belong to a classroom-based PLC; and finally through their fieldwork they belong to a school-based PLC (Fig. 3). Described below are specific structures and mechanisms we established to further enhance the collaboration within and among these nested PLCs.

Students enrolled in almost all campus-based coursework as a cohort group. A cohort wiki was set up before the orientation. A wiki is a collaboratively developed web site that all cohort members would contribute to throughout the program. At the orientation, teacher candidates interviewed each other at the orientation and used laptops to create web pages for one another as

![Fig. 2. Collaborative Lesson Planning Cycle.](image-url)
a way to learn more about each member of the cohort. Community agreements were established to assure an emotionally safe learning environment. These were posted on the wiki and revisited over the course of the year to assure the cohort was interacting in the most productive ways possible. All courses throughout the year had page links on the wiki where teacher candidates could work collaboratively on projects, share lesson plans, and discuss theory.

The first quarter, summer 2009, started with a learning theory course in which teacher candidates were required to participate in group projects. An end-of-the-summer two-day retreat consisted of team building activities, sharing food, and a systems thinking training at a local nature retreat. During September 2009, candidates placed at each of the two schools worked as teams to create a wiki page conveying information about each school’s unique learning environment. By winter quarter teacher candidates were placed into Critical Friends Groups (CFGs) where they met weekly using protocols to discuss dilemmas in their developing practice as they began their student teaching experience. These CFGs are consultancy groups that worked together for the remainder of the academic year. They posed problems of practice, viewed videotapes of each other teaching, and shared insights and experiences.

1.1.4. Developing teacher vision

As can be seen through the conceptual framework and careful design of our professional learning model, our teacher candidates were engaged in collaboration on multiple levels. As argued previously, we wanted them to see through their lived experience, that they can better accomplish meeting the needs of their students when they worked in collaboration with others thus influencing their vision of what it means to be a teacher. Hammerness (1999) describes teacher vision as “a means to explore how emotion and cognition come together to shape a teacher’s learning and decisions about their professional lives,” (p. 4). Our desire was that our teacher candidates would recognize and articulate their vision of practice (McNay & Graham, 2007) and then seek and/or develop collaborative relationships in their future teaching settings so that they will have support as they work to achieve their vision.

Internationally, there are issues with novice teachers’ feeling ill-prepared for the difficult job of teaching and dealing with a vision of teaching that does not mesh with the realities of challenging teaching contexts (Hammerness, 2003; Stokking, Leenders, De Jong, & Van Tartwijk, 2003). Grisham et al. (2002) studied whether graduates’ visions of teaching are influenced through participation in a collaborative teacher education program. The findings from their work in a professional development school indicated that their participants’ core beliefs about collaboration were developed and sustained through their program. This led us to ask ourselves whether our multi-layered collaborative model could also influence our teacher candidates’ vision of what it means to be a teacher.

1.2. Research question

In our work, we sought to understand how each of these elements — teachers (school and university) (A), teacher candidates (B), and students (C) — interacted to produce learning across the partnership. This article focuses on the teacher candidate (B) component of our broader partnership research agenda. The specific research questions addressed in this article are: How does participation in a collaborative professional teacher education model influence teacher candidates’ perceptions of their learning? How does collaboration affect their vision of what it means to be a teacher? Subsequent articles will focus on the other participants, their interactions, and their collective learning.

2. Methodology

2.1. Context

Participants consisted of 18 elementary and five middle school teacher candidates (eighteen females and five males ranging in age from mid-twenties to mid-forties) enrolled in a large public urban university’s one-year intensive graduate-level teacher licensure program. Also included were sixteen mentor teachers, eight site and university supervisors, and the principals in two urban public K-8 schools. Four of the teacher candidates had children. There was one bilingual Latina in the cohort and the balance of the cohort was Caucasian. To be accepted into the program, all candidates must
have had an undergraduate grade point average of at least 3.0 and have passed teacher exams required by the state-licensing agency.

We divided the teacher candidates between two K-8 schools enabling consistent support from faculty, supervisors, and other cohort members during their time in the field. Teacher candidates started in their field sites late August 2009 joining the staff for teacher planning days. They spent most of September at the school site until the university’s fall quarter started at the end of September, at which time they reduced their time in the schools to two days a week so they could engage in university coursework. Winter quarter 2010, they transitioned to half-time student teaching and spent approximately 20 h a week at the school site in addition to coursework on campus. Spring quarter 2010, they assumed the role of full time student teachers and spent at least 40 h a week at their site as well as attending a late afternoon seminar on campus every other week. Teacher candidates completed their state licensure requirements by June 2010.

Fifteen out of the 23 original cohort members were in multi-teacher candidate placements, forming a small classroom-based PLC with the mentor teacher. Twelve were in triads with three sharing a pair of teachers, forming a five-person team.

Although both schools in the study were in the same urban school district, they served very different populations. One of the schools had a focus on science and mathematics inquiry and an accelerated curriculum. All but a handful of students met or exceeded state standards. Students are selected by lottery from throughout the district, although 50 percent lived in close proximity to the school.

2.2. Data sources and collection

For this qualitative case study we triangulated the data sources to explore the research questions. Data sources include 1. teacher candidates’ individual written reflections; 2. separate semi-structured focus group interviews with teacher candidates and mentor teachers at both schools at the end of winter and spring quarters; 3. individual semi-structured interviews with the principals at both school sites; and 4. observations of interactions within the various PLCs.

One way we accessed teacher candidates’ perception of their learning was through a series of reflective writings at the conclusion of each quarter. Teacher candidates responded to a prompt asking them for examples of how collaboration supported their learning. They wrote quarterly reflections regarding their growth as an educator as well as CFG consultancy group reflections.

We conducted hour-long focus groups with teacher candidates and mentor teachers at the completion of winter and spring student teaching experiences at each school site and hour-long interviews with the principals in June, after the end of the school year. All focus group discussions and interviews were video recorded. We asked the same questions of teacher candidates, mentor teachers, and principals—inquiring about their perceptions of the impact of this collaborative model on the K-8 students’ learning, the teacher candidates’ learning, and the mentor teachers’ learning. In all cases, we emailed the questions in advance, allowing time to think about responses before the scheduled discussions.

The researchers were in the schools on a weekly basis engaged in a variety of activities. These included instructional walk-throughs, formal classroom observations with the use of observation protocols, collaborative planning sessions with triads, check-ins with the building principal or school-based teacher leaders. The researchers also met weekly to discuss their observations and reflections regarding the partnership more broadly. Because we gathered feedback from teacher candidates, mentor teachers, supervisors, and principals along the way we also used the data from focus groups, reflections, and observations to refine and improve the partnership. For example, as we identified characteristics of exemplary mentor/teacher candidate relationships, we explored ways to foster similar interactions within all the placements. These characteristics included: building in routines and structures for clear communication, explicit articulation of visions of teaching, and an openness to explore alternative ways to accomplish learning goals.

2.3. Data analysis

To assure trustworthiness in our data analysis we enlisted review from colleagues both external and internal to the partnership. We read and coded the data collected during our fall and winter term with the assistance of a third colleague involved in our university partnership task force. We identified themes in the data, which allowed us to refine our data collection in subsequent terms to investigate ideas that emerged. We also enlisted six graduate students enrolled in a research seminar to analyze the written reflections and video from focus groups. This provided us with an objective set of readers to verify the themes. The principal interviews served as a both a member-check and a next steps planning session. Ultimately, we organized and analyzed the data from the multiple data sources by research question, by design principle, and by subcategory within the each design principle. We then looked for recurring themes within each of these categories. It was from this organization that we selected representative quotes presented in Section 3. The findings were shared with our school and university partners to verify alignment with their perceptions and experiences.
3. Findings

In this section, we examine ways that collaborative professional learning influenced teacher candidates’ perceptions of their learning and supported the development of the teacher candidates’ vision of what it means to be a teacher.

3.1. Influence on teacher candidate’s perceptions of their learning

The following is an examination of the teacher candidates’ perception of their learning organized around the cohort’s three design principles: establishing professional learning communities, connecting theory and practice, and eliciting K-8 student thinking to further learning.

First, the teacher candidates participated in several layers of PLCs. Table 1 provides examples of teacher candidates’ perceptions of their learning as it connects to the critical features of PLCs as described in Section 1.1.2. Within these PLCs, teacher candidates noted learning from engaging regularly in reflective dialogue within their classroom-based PLC and their CFG consultancy group. Many mentioned the significance of feedback from a peer with shared understandings versus the feedback from their mentor. By opening their classroom doors and experiences to one another and deprivatizing their practice, the teacher candidates learned through their collective successes and failures. As stated previously, our triad members reported feeling safe to learn alongside their mentor and cohort colleague rather than feeling threatened or in competition with one another. Using the Collaborative Lesson Planning Cycle, teacher candidates and mentors noted their learning from multiple perspectives and insights about approaches to content and support for students. Through this process, they honed-in on the big ideas of a lesson and maintained a focus on student thinking. Collaboration was central to teacher candidate learning. There was frequent reference to collaboration across our data sources. Several teacher candidates recognized the symbiotic relationship in these collaborative environments. Our cohort possessed a shared norm and value of collaboration. As members of PLCs, they commented about the need for flexibility, risk-tasking, communication, and ongoing reflection about their developing practice.

Connecting theory and practice is our second design principle. While every teacher education program would say that the intent of fieldwork is to bridge the theory presented in coursework with the practicality of day-to-day instructional decisions, the triad model and other cohort structures, which included field-based assignments, accomplished that bridge and more. Teacher candidates stated that when they implemented the course-based learning in the field they really learned.

The modeling of good practice has been such a relevant and important aspect of how I am acting in the field. I recreate things that my professors have me do and see how successful they are (Carrie, Written Reflection, December 2009).

I have spent the past year studying about collaboration, meaningful learning, and best practice, but I don’t think those things really sunk in until I had the chance to use them in my classroom.

### Table 1

<table>
<thead>
<tr>
<th>Characteristics of effective PLCs</th>
<th>Selected evidence of teacher candidate learning</th>
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<tbody>
<tr>
<td>Engage in reflective dialog</td>
<td>It’s nice to be able to talk about what we’re seeing and discuss what we could do to make it more student-involved and inquiry-based. We’re able to give each other a lot of ideas about how to take scripted lesson from the curriculum and add our own spin on them to make more meaningful for students (Tami, Written Reflection, March 2010).</td>
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<tr>
<td>Deprivatize practice</td>
<td>Perhaps the biggest effect of this collaborative model is that what effects one of us affects the rest of us. If we see someone’s successes we learn from them. If we see someone fail, we learn from it too. More people in the mix, the more potential learning experiences arise. This allows us twice the experience in the same amount of time (Ellen, Written Reflection, March 2010).</td>
</tr>
<tr>
<td>Collective focus on student learning</td>
<td>We both approach lessons with different perspectives. We talk about different students and their needs. We talk about ideas we need to highlight and the possibility to adapt and make changes depending on the student’s response (Abby, Focus Group, March 2010).</td>
</tr>
<tr>
<td>Collaboration</td>
<td>The CFGs have been a significant part of my collaborative learning. Our diversity of experiences provided four unique perspectives, enriching our discussions and providing more rewarding and productive collaboration (Carol, Written Reflection, June 2010).</td>
</tr>
<tr>
<td>Shared norms and values</td>
<td>Each day [our triad] sits around and debriefs the day. Often times we joke about not “formally” meeting like the other teacher candidates and mentors, but the content of our discussions is so real and honest that I think it is more effective than any kind of protocol. We’re not afraid to talk about our success and failures, what’s working best, and what we might not want to use next time (Nancy, Written Reflection, March 2010).</td>
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* Characteristics identified by Kruse et al., 1994.
every single day, and genuinely understand what it was like to work with other people to make everything I was teaching relevant and meaningful to each one of my students (Michelle, Written Reflection, June 2010).

Many commented on the ways that the field-based assignments had them implement strategies in their classrooms that allowed deep examination of student thinking which may not have otherwise been the norm. This, they felt, would support their own future instruction and their insistence on getting to know their students. In math class, we have been learning about an inquiry-based curriculum and how to really allow students to own their thinking. Through completing assignments... This not only has shown me what an inquiry-based classroom might look like, but has given me the chance to understand how my students think in math... Our language arts class has also given me the opportunity to understand student thinking through conducting reading and writing conferences. Assignments such as these really taught me that the more you know about your students, the more effective you will be when teaching lessons (Cassandra, Written Reflection, December 2009). One thing that sticks out in my mind is interviews I conducted with a few students at the very beginning of the school year. These interviews were meant to revolve around students' views on math, but with one student in particular, the interview turned in to something much more personal... Immediately, I understood the importance of getting to know and understand each individual student in order to create an environment that is supportive of his/her learning. Instead of brushing a student off as “hyperactive” or “uninterested,” it is critical for teachers to find a way to connect the subject matter being taught to everyone in the class (Brenda, Written Reflection, December 2009).

In addition, teacher candidates reveal a focus on student thinking both in their collaborative planning and debriefing. They see the value in eliciting student thinking and allowing students' responses to influence their actions and decisions. Recently my coteaching colleague and I worked together to construct and teach a lesson. During the lesson construction, we were able to test ideas with each other and discuss the benefits and drawbacks of specific techniques. Through this process, we were able to put together a lesson that was dynamic, creative, and fun. More importantly, we were able to... emphasize the big ideas and encourage higher levels of thinking by students. After teaching the lesson we also debriefed about ways to further improve or develop the material. This experience was greatly enhanced by collaboration and has given me some great ideas to continue using in my practice (Kit, Written Reflection, March 2010).

When writing a lesson I love having the opportunity to collaborate... We talk about the different students and their needs. We talk about ideas that we need to highlight and the possibility to adapt depending on the student's response (Sybil, Written Reflection, March 2010).

Various field-based assignments pressed teacher candidates to collaboratively examine student thinking. Our data suggest that these student-focused planning practices generalized across the teacher candidates' teaching.

3.2. Influence on teacher candidate’s vision of what it means to teach

In relation to the second research question, three themes emerged regarding teacher candidates' visions of what it means to teach. These are: teaching each student for his/her understanding, forming relationships and building learning communities with students and with colleagues, and becoming a reflective practitioner as an individual and with others with a common focus on student learning.

Teacher candidates recognized that to teach each student for understanding they must slow down and take the time needed to build understanding, design rich lessons that attend to student needs, assure the lessons are broadly accessible, and connect their teaching to their students' lives and/or across the curriculum. I have learned that it is more important to thoroughly cover a few concepts than to cover a lot of concepts on a surface level. It is okay to stretch a lesson out for more than one day, and it is important to do so if student learning requires this. In the future, if I have lessons that take more time than anticipated, I will make sure that I take the extra time to develop student understanding of the concepts rather than just driving through the curriculum (Jane, Written Reflection, June 2010).

You have to be dedicated to the pursuit of educating the students, making sure they have plenty of time to absorb the material while attempting to assess what they know. One way I found to do this is to make sure to incorporate the content across the curriculum. By doing this, I found that you ensure that the students have a higher success rate (Mike, Written Reflection, June 2010).

Throughout this term, I have come to realize that it is my responsibility to adjust and develop curriculum that is accessible to every single one of my students. Although this sounds somewhat idealistic, being in the classroom every day has made me see that it is not only totally possible - it is also totally necessary (Lori, Written Reflection, June 2010).

This vision of teaching each student, as an individual, teaching with depth and taking time for sense making, is not one that is unique to a collaborative professional learning model. Yet, we found that working with more adults in the classroom gave our teacher candidates opportunities to understand more about individual student thinking and to utilize differentiated instructional practices regularly, in a way that might not be possible in single placements. Our teacher candidates commented on the importance of forming relationships and building learning communities with students and with colleagues.

I have gotten to know some students so well that I can immediately see what they need from me in order to be successful at whatever it is they are doing... It's been a great experience to bond with these students, and it's made me see how much of a difference one person can make. It also made me very nervous because I'm not sure how I can do this when I have my own class of 25 kids, and no one to help me. I think one of the most important things that I've learned though, is that I probably won't ever feel like I'm getting through to everyone, but as long as I'm feeling like that, and trying, I am being a good teacher (Ellen, Written Reflection, June 2010).

Giving students boundaries, setting up healthy goals, and preparing for constant check-in conversations about personal or educational problems is [sic] what helps students be successful. These patient practices are a critical part of the teaching world that sometimes teacher education programs forget to emphasize. All students deserve a teacher who can help them be independent learners and kind individuals. This year has inspired me to set up my classroom as a place where leaders are born and are encouraged to be who they are, but also know that they have to try and sometimes trying is the hardest thing that they will ever have to do (Jane, Written Reflection, June 2010).
My colleagues were such a huge help to me when it came to giving advice and receiving feedback about problems we are all facing in our classrooms. [The CFGs were] a constant reminder about how important it is to collaborate and continually turn to each other for help and advice throughout our careers (Carol, Written Reflection, June 2010).

Our teacher candidates express these beliefs based on experiences in settings where they had opportunities to build collaborative relationships with students and colleagues. One wrote in June, “because I am so used to collaboration, I am sure I will seek it out and try to incorporate it into my future teaching.” (Focus Group, 2010). We believe that this collaborative experience positions teacher candidates to seek and build such communities in their future practice.

In an effort to serve their students well, teacher candidates recognized the need for becoming reflective practitioners, critiquing their own practice and opening their classroom to others.

Earlier in the school year, it was hard for me to teach a lesson and be able to see the positives and negatives of that lesson afterward. I often was concentrating so hard on my teaching as it was happening that I couldn’t take a step back and sort of look at my teaching from an outside perspective… As my confidence grew in teaching lessons, I was able to step away from myself and see the successes and failures of my lessons more clearly. There isn’t always going to be someone else around to observe and give feedback on my teaching, so it was important for me to become more comfortable in doing this myself (Michelle, Written Reflection, June 2010).

One teacher candidate commented on the power of being able to watch and listen carefully to students through video recording, thus offering a way to reflect on her practice as well as open her classroom for collaboration with others.

…video provides a tool to see students’ behavior when the teacher isn’t next to them and to gain insight into their interactions, their teamwork and communication… This seems especially important with a teacher working alone in a room. There is no way that I would be able to pull away from my teaching responsibilities within a lesson to just watch and listen to a group for ten or more minutes, but a video camera can be that observer for me. This also is a valuable tool for collaboration as a colleague(s) could be invited to watch the video with or without me and to provide their thoughts and feedback based on their observations (Cassandra, Written Reflection, June 2010).

Most, if not all, teacher education programs strive to equip teacher candidates with the tools to be reflective practitioners. We believe the emphasis on collaboration in our model will lead teacher candidates to establish a reflective practice that includes not only them as individuals but opens their classroom and practice to others (e.g., colleagues, mentors, supervisors). As Jane expressed in her final reflection, “what I need in my teaching community is all of us working hard to accomplish goals for our students, the school, and supporting each other.” (Focus Group, June 2010).

4. Discussion

In general, our findings confirm those from other research on the potential of the triad model for student teaching (Birrell & Bullough, 2005; Goodnough et al., 2009). Our teacher candidates came away from the experience seeing teaching as a collaborative endeavor. The ongoing feedback from both their mentor teacher and cohort colleague was critical to their learning to teach process (Bullough, 2005). The teacher candidates’ comments reveal that the increased number of adults in the classroom supported them with getting to know each student and their unique learning needs—shifting the focus from their own actions and toward their students’ learning. They also reported increased confidence due to the support of their cohort colleague, which resulted in their willingness to try-on practices that may differ from that of their mentor teachers.

The findings also confirm several challenges reported by Goodnough et al. (2009). Specifically, both mentor teachers and teacher candidates described confusion that occasionally emerged with regard to classroom management. In many ways, this pressed triads to improve their communication to ensure consistency in responses to students.

Challenges that Goodnough et al. (2009) found in their work with triads was a loss of individuality among teacher candidates and competition between teacher candidates. This was not the case for our cohort. Teacher candidates possessed a deep level of trust and safety with one another that enabled them to take risks, express their individuality, and recognize that there is more than one approach to reaching students. The teacher candidates engaged in structured observations focused on student thinking. They also collaboratively analyzed student data, participated in lesson planning cycles, and worked through triads as an approach to reaching students. The collaborative work accelerated their opportunities to learn as they learned from both their successes and mistakes along with their partner’s successes and mistakes. The cohort structure led teacher candidates to bond and this bond was even stronger due to the proximity of their classroom-based work. The bond was not limited to commonalities and friendship alone it extended into collaboratively learning to teach. This is similar to the positive relationships described by Bowen and Roth (2002) in their study of paired teacher candidates and the intentional co-mentoring relationships established by Le Cornu (2005).

As shown in our findings, our teacher candidates stated that collaboration was central to their learning. By deprivatizing their practice, they learned through their collective successes and mistakes. They found they learned best when they were able to apply their learning from their courses to the field. Field-based assignments required teacher candidates to implement strategies in their classrooms that allowed deep examination of student thinking. These findings are similar to those of Campbell-Evans et al. (1997) in their alternative teacher education program in Australia. In yearlong field placements, their teacher candidates were also more a part of the collaborative ongoing dialog and reflection about classroom practice across the school’s faculty.

Our teacher candidates finished the program with a strong commitment to teach each student for understanding. They envision building strong relationships and learning communities with students and with colleagues—seeing this as part of what teachers do. Their comfort with deprivatizing their teaching practice differs from the findings of Goodnough et al. (2009) who reported competition as a challenge that emerged between teacher candidates in the triad setting. We hypothesize that the lack of competition in our cohort relates to the use of the various PLC structures (Kruse et al., 1994) and the collective focus on student thinking to inform instruction (Franke & Kazemi, 2001; Hiebert et al., 1997; Minstrell & van Zee, 2003; Pellegrino et al., 2001). The focus on students when observing in the classroom rather than on the teacher may have also contributed to the teacher candidate’s eagerness to open their classroom door to learning from one another in these ways even when it was not dictated as an assignment. Michelle comments in her end of the year reflection, “I’ve learned not to take things personally… because it is not about me; it is about how I can make it better for the kids.” (Focus Group, June 2010). Finally, our teacher candidates found value in the
ongoing examination of their practice, both individually and with others, enough so that at the end of the program they looked for teaching positions where they might have the opportunity to collaborate with a common focus on student learning. When teacher candidates were asked to write to the prompt “Skeptics might question, you want novices to learn from novice to learn from novice? How would you respond?” Cheri offered the following response:

By learning with and from one another, we build the kind of community in which we learn deeper and grow stronger in our abilities as teachers. Most importantly, we build a support system in which we can feel safe to take risks, to learn from both our successes and our failures. [We] leave this program equipped for the kind of teamwork and collaboration that is the model in many schools/districts and prepared to help build this model in those places where it does not exist… We can and should learn not only from, but also with others, thereby improving the teaching and learning for teachers and students alike (Cheri, Written Reflection, June 2010).

These words provide a strong testimonial to this teacher candidate’s vision of teaching as a field that revolves around continuous collaborative learning. McNay and Graham (2007) “encourage teacher educators to envision ways in which student teachers might not only be supervised in the development of skills but also mentored in the development of vision,” (p.235). Our data reveal that this was happening within our collaborative professional learning model.

5. Implications and further research

This research informs our next steps in the development of school/university partnerships to better support learning. Specific areas we intend to address with subsequent cohorts and partnerships include adjusting field-based assignments, developing mentor teachers’ knowledge and skills as mentors and with collaboration, and drawing purposefully upon mentor teachers’ expertise by having them lead teacher candidate and collegial learning.

As we deepen our partnership with these schools, we plan to better coordinate field-based assignments with mentor teachers. For example, teachers will codetermine structure and timelines for assignments. Mentors will provide their teacher candidates with regular opportunities to engage in classroom tasks that connect field-based experiences to their course-based learning. Faculty will guide teacher candidates to implement best practices in ways that honor the school’s or classroom’s curricular reality.

Mentor teachers talk about their reasoning for engaging in the decisions and moves they make. They purposefully provide their teacher candidates with tasks they see as venues for the teacher candidates’ learning and provide rationale for doing so. It is through this process of articulation that both teacher candidates and mentor teachers report learning. We want our mentor teachers to view themselves as coteacher educators. In that role, they provide vision of teaching and learning through their actions, decisions, and dispositions toward ongoing learning. We will encourage them to establish structures from the beginning where they will talk explicitly and regularly about their reasoning, actions, and decisions. Future research could examine the variety of structures that teams employ and ways that the reflective dialog they engage in influences subsequent instruction.

We are encouraged by strategies for increasing the triads’ access to tools that support examination of student thinking within the school day. In a couple classrooms, one of the researchers collaborated with the triad over an extended period of time (e.g., three to five days). We would like to systematically engage in such collaboration with all mentor teachers so that they feel equipped for such conversations regardless of the researcher or other university supervisor being present. We found this collaborative model worked particularly well at the middle school level where content repeats later on in the day. Multiple sections of the same course are a natural site for coplanning, coteaching, and debriefing. We are interested in nurturing the synergy of this type of collaboration and examining the impact of the professional learning model in that context. Future research might examine the ways in which participation in the multiple layers of professional collaboration in our model produces results that are the same or different from those of other researchers employing triads at the secondary level (cf., Bowen & Roth, 2002; Nokes, Bullough, Egan, Birrell, & Hansen, 2008; Roth & Tobin, 2001).

Zeichner (2010) describes ways teacher educators need to cross the typical boundaries that exist between schools and universities and create less hierarchical relationships that promote learning across partnerships. We want to further utilize multiple sources of expertise among teachers, administrators, faculty, and teacher candidates. In this first year of the partnership, faculty joined triads on a couple occasions for the Collaborative Lesson Planning Cycle; we are interested in developing this practice as a norm. In addition, we have found that faculty has been invited to “guest teach” in K-8 classrooms and we would like to extend this to mentor teachers “guest teaching” in our courses on campus. For two of our collaborative professional learning sessions, faculty collaborated with mentor teachers to plan and facilitate the sessions. As we find out more about what each member of the partnership has to offer, we are confident that more opportunities for “boundary crossing” will arise. We hypothesize that increased partnering will foster an environment where collaboration is viewed as a context for worthwhile teacher professional learning. A line of inquiry examining the impact of the various boundary crossings on the partnership could be pursued as well.

One of our teacher candidates, Cassandra, posed the following question: “How can we learn to work closely with our professional peers, to seek help and advice, to not only learn from, but to actively seek critical feedback if we never experience this kind of environment during our teacher training?” In further research, we will follow these teacher candidates into their teaching settings to determine ways in which their visions of collaboration continued into their current practice. We argue that this multi-faceted collaborative model provides the powerful learning opportunities that Feiman-Nemser (2001) and others (Buchberger & Buchberger, 2004; Darling-Hammond, 2010; Zeichner, 2010) call for in teacher education and since our data reveal that the use of nested collaborative PLCs within our program led to the development of the norm of collaboration among our teacher candidates, it would be of interest to see what happens with implementation of this intentional model in other settings or with iterations of the model.

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