Prospective and Mentor Teacher Perspectives on Joint Learning Spaces

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Scholarship in teacher education has repeatedly emphasized the disconnect between the theory and principle-based university methods courses and the practice-oriented elementary school classroom (Ziechner, 2010). In mathematics and science, methods courses often emphasize student-centered, problem solving and inquiry-based instruction that is seldom realized in the field (Smagorinsky, Cook & Johnson, 2003). On the other hand, school-based practitioners often critique university-based methods courses as overly theoretical and lacking attention to important practical concerns (Smagorinsky, Cook & Johnson, 2003).

In the Beyond Bridging project, one of our responses to this disconnect has been to create opportunities for hybrid learning spaces by bringing prospective teachers (PSTs), practicing mentor teachers (MTs), and teacher educators together to explore key ideas related to mathematics and science teaching. By hybrid, or third spaces we mean spaces that resist traditional divisions between academic knowledge and practitioner knowledge and that emphasize the knowledge, experiences and strengths that each participant brings, that when intertwined provide the opportunity for “an expanded form of learning and the development of new knowledge” (Gutierrez, 2008, p. 152; see also Gutiérrez, Baquedano-López, & Tejada, 1999). We see such spaces as having the potential to mediate the methods-field gap because they “bring together school and university-based teacher educators and practitioner and academic knowledge in new ways to enhance the learning of prospective teachers” (Zeichner, 2010, p. 92). In other words, hybrid, or third spaces have the potential to elicit and connect multiple discourses, such as the discourses of methods and the discourses of the field, in ways that support PSTs’ learning.

However, while we acknowledge that all interaction is characterized by a certain level of hybridity (Bruna, 2009), we also know that simply bringing together participants from different communities and discourses (PSTs, MTs, teacher educators) for a “joint learning event” does not guarantee the kind of connections across discourses and co-construction of knowledge that we envision. In fact, our analysis of MTs’ and PSTs’ participation in early iterations of joint learning events supports this claim (Gunckel, this symposium). For this reason, we have attempted to carefully design these joint learning events to maximize opportunities for all participants to contribute knowledge and experience, and to make connections among the various discourses that arise (i.e., discourse of the field, discourse of university-based methods courses).

While a thorough description of these joint learning events is beyond the scope of this paper, they have included activities such as MTs and PSTs conducting problem-solving based interviews with students in the mentor teachers classroom, and then debriefing the interviews with other MT/PST pairs and the mathematics methods course instructor. Other sessions have engaged MT/PSTs pairs in analyzing curriculum materials from the MTs’ classroom using frameworks introduced in the science methods course (e.g., I-AIM). While some sessions have included all PSTs and their MTs, in other instances, a subset of MTs joined a weekly mathematics or science methods course to participate in course activities with the PSTs (contributing their insights and experiences), and in some instances, co-teaching portions of the class session with the course instructor. In each of these cases, we have aimed to position both MTs’ experiences and insights related to teaching and learning mathematics and science, as well as the knowledge that PSTs bring, both from their coursework and their observations in the field, as valuable.

While we have purposefully designed these spaces to maximize opportunities for
hybridity (working from the assumption that eliciting and making connections among multiple discourses would be supportive of PSTs’ learning), research on MT/PST interactions suggest that a achieving a fluid and productive exchange of ideas among practicing and prospective teachers may be challenging. MTs and PSTs each bring expectations about their role in mentoring interactions, as well as assumptions about the roles of others, and these perspectives impact the type of learning that occurs for both groups of participants (Abell, Dillon, Hopkins, McInerney & O’Brian, 1995; Franke & Dahlgren, 1996; Koballa, Bradbury, Glynn & Deaton, 2008). More specifically, research has shown that MT and PST expectations sometimes maintain traditional divisions in power and status (e.g., MT as expert, PSTs as novice) that might work against eliciting and connecting different discourses to generate new understandings (Franke & Dahlgren, 1996; Graham, 1997; Koballa et al., 2008). Additionally, when PSTs’ and MTs’ expectations about roles are not realized, this can result in disillusionment and tension (Graham, 1997; Koballa et al., 2008).

Given these potential challenges, we thought that in addition to our research on MT and PST participation in these joint learning events (e.g., Wood & Turner, under review; also see the other papers in this symposium), we should also examine MTs’ and PSTs’ perspectives on these sessions. We were curious about what MTs and PSTs felt that they learned or gained from these sessions, as well as the ways in which they found the sessions to be challenging or unproductive. We also sought to understand how MT and PST perceptions of these joint learning events might reflect conceptualizations of their roles in mentoring relationships. Bradbury & Koballa (2008) use the construct of border crossing to interpret the negotiation of roles and expectations that needs to occur for MTs and PSTs to develop successful working relationships. While our focus was not on negotiations between specific MT/PST pairs, we were curious about the types of border crossing that might be necessary as MTs and PSTs who enter joint learning events with a range of conceptualizations of their roles are then invited to participate in activities that in many cases foreground collaboration and co-learning.

In short, examining MTs’ and PSTs’ perspectives is important because their perspectives can shed light on some of the tensions that we have noticed in the joint learning events, specifically the kind of identity shift that a move towards more hybrid, collaborative interactions among MTs and PSTs might require. Ultimately, we contend that a deepened understanding of MT and PST perspectives on joint learning events can inform the design and refinement of these sessions in the future. This study is guided by the following research questions:

• What are PSTs’ and MTs’ perspectives on their participation in joint learning events?
• Specifically, what do they feel that they or others learned during these events, and what challenges or tensions do they identify?
• How might PSTs’ and MTs’ perspectives reflect their conceptualization of their roles?

Relevant Literature and Frameworks

Both MTs and PSTs enter mentoring interactions, such as those that might arise during joint learning events, with conceptualizations about their own and others’ roles
In many ways, MT and PST conceptualizations mirror the different ways that mentor-novice relationships have been described in the field.

**Personal Orientation.** For example, early research on mentoring described mentors’ role as that of a friend, confidant and emotional supporter of PSTs (Little, 1990). Entrance into teaching is clearly a demanding and in some instances stressful process for new teachers, and the MTs’ role was seen as one of a nurturing advocate who focuses on the affective needs of PSTs and provides moral support (Abell et al., 1995; Koballa et al., 2008; Zanting, Verloop, Vermut & Van Driel, 1998). From this orientation, MTs emphasize building trusting relationships and listening to the PSTs experiences, rather than helping PSTs to improve their teaching practices. In a study of PSTs (n=78) and MTs (n=40) in an English teacher education program in Israel, Rajuan and colleagues (2007) found that conceptualizing mentor as friend and supporter was the most prevalent orientation among PSTs. PSTs expected MTs to be kind, polite, calm and considerate, and wanted MTs to take note of their ideas and opinions. Drawing on the work of Calderhead and Shorrock (1997), Rajuan et al. (2007) refer to this conceptualization of MT roles as a *personal orientation*. They explain that this conceptualization:

- emphasizes the importance of interpersonal relations in the classroom and views learning to teach as a process of “becoming,” or personal development. It takes the form of offering a safe environment that encourages exploration and discovery of personal strengths. (p. 225)

While MTs in their study also expressed this orientation, it was less common. Moreover, while MTs wanted to “be there” for PSTs and to be understanding of the problems and challenges that PSTs face, they also felt (understandably so) an obligation to ensure their students’ learning. This dual set of allegiances (to the PST, to the elementary student) sometimes created conflicts for MTs as they wanted to be open to PSTs’ ideas and suggestions but at the same time felt responsible for students’ learning.

**Technical Orientation.** Later research on mentoring emphasized the expert role of the MT, as compared to the novice, or apprentice role of the PST. From this orientation, MTs are responsible for modeling teaching strategies, and sharing practical advice about topics such as curriculum, assessments, and classroom management (Koballa et al., 2008). In turn, PSTs look to MTs for specific feedback and suggestions, and expect easy-to-implement responses to their questions (Franke & Dahlgren, 1996; Graham, 1997). In short, MTs assume the role of expert, providing specific, practical guidance, and PSTs assume the role of an apprentice, relying heavily on MTs for guidance. Some researchers have cautioned that while an expert/novice orientation is in many ways sensible (MTs do have more knowledge and experience related to classroom teaching than their PST interns), this way of conceptualizing MT/PST roles runs the risk of reproducing current teaching practices which may or may not be aligned with the reform-oriented, problem solving-based visions of the methods courses (Bradbury & Koballa, 2008; Franke & Dahlgren, 1996). More specifically, because this orientation emphasizes imitation of MT practice, PSTs may have limited opportunities to critically reflect on their teaching or to consider alternate approaches.

Rajuan et al. (2007) found that the expert/novice conceptualization of MT and PST roles, which they referred to as a *technical orientation*, was among the most common among MTs in their study. MTs expected to pass on their accumulated knowledge of teaching to PSTs, and saw themselves as role models that PSTs should
emulate. They felt a responsibility for helping PSTs to distinguish between “right” and “wrong” teaching approaches, and wanted to provide PSTs with usable “tips” that they could immediately implement in their practice. While some PSTs expressed a technical orientation, it was not as common as the personal orientation described above, or the collaborative orientation described next. PSTs in particular sought expertise from MTs about issues such as lesson planning, time management and classroom management. However, this desire to learn from MTs’ expertise was tempered by expectations that MTs trust PSTs’ ideas and do not undermine their efforts to explore different teaching approaches.

**Collaborative, or Educative Orientation.** Finally, recent conceptualizations of mentoring have emphasized more egalitarian relationships between MTs and PSTs in which both participants “collaborate as partners to solve problems of practice” (Bradbury, 2010). This conceptualization draws heavily on Feiman-Nemser’s (1998, 2001) work on educative mentoring. In educative mentoring relationships, MTs value the ideas and perspectives of PSTs, and recognize that teaching is a complex practice where there is rarely a single correct approach or answer. MTs work collaboratively with PSTs in “cothinking relationships” where both participants contribute ideas related to immediate issues of concern, or problems of practice. As Bradbury (2010) notes, “unlike more traditional forms of mentoring, educative mentoring seeks to meet the immediate needs of novice teachers while also focusing on long-term goals for growth” (p. 1051). In particular, one of the key goals is to “cultivate a disposition of inquiry” among MTs and PSTs (Feiman-Nemser, 2001, p. 28).

Rajuan et al. (2007) found that along with the technical orientation described above, a collaborative, or educative notion of mentoring was common among MTs (referred to as a practical orientation in their study). MTs emphasized discussing teaching problems with PSTs and working with PSTs to cope with dilemmas that arose. They emphasized that classrooms are complex, dynamic settings in which there is often no absolute solution. This conceptualization of MT/PST roles was also common among PSTs. Rajuan et al. noted that PSTs often used verbs that “signified expectations for a collaborative effort to better understand how to improve, help, discuss and share dilemmas that occur spontaneously in classroom situations” (p. 234). We see this orientation as well-aligned with our vision of hybrid interactions among MTs and PSTs during joint learning events as it encourages participants to co-construct new ideas and understandings by drawing on the perspectives of all participants. In turn, leveraging multiple perspectives may help MTs and PSTs to make connections between the ideas and frameworks of the methods course and the realities of the field.

In summary, prior research has conceptualized MT and PST roles in various ways, some of which may be more aligned with the hybrid, third space interactions that we envisioned in the joint learning events. In this study, we examine MTs’ and PSTs’ perspectives on the joint learning events, with particular attention to how their perceptions might relate to conceptualizations of their roles in mentoring relationships.

**Methods**

**Participants.** Participants for this study included 7 PSTs and 14 MTs who participated in the Beyond Bridging project over a three-semester period from 2011-2012. PSTs participants were enrolled in mathematics and science methods courses that
included various joint learning events. As previously noted, these events varied from
sessions where all MTs and PSTs came together to learn about particular constructs and
frameworks (i.e., cognitively guided instruction, I-AIM frameworks for science) and then
to engage in collaborative activities such as lesson planning, student interviews or
curriculum analyses, to more standard methods course sessions when one or several MTs
joined the class either in a co-teaching and/or co-learning role. MT participants all had a
PST intern in their classroom during the mathematics methods semester, the science
methods semester, or both (methods courses were spread across two semesters). MTs
were encouraged to participate in all joint learning events.

Data sources. Data sources included individual and focus group interviews. PST
participants were individually interviewed at the end of the mathematics methods
semester (n=6) and the end of the science methods semester (n=5). Participation was
voluntary. Several PSTs elected to participate in both rounds of interviews (n=4), while
others only participated at the end of one methods semester (n=3). PST interviews aimed
to explore their experiences in the methods course and joint learning sessions, with
particular attention to what PSTs thought that they learned (or did not learn) about
teaching and learning mathematics and science. Interview questions relevant to our focus
included things such as:

• One of the learning opportunities you had this fall was when you and your mentor
teacher attended the science methods class together. What was your experience in
these sessions? How was learning about science teaching in these sessions
different from when the mentors were not there?

• In science methods there were three sessions in which mentor teachers visited
science methods to co-teach. What was your experience in these sessions? How
was learning in these sessions different from when the mentors were not there?

We conducted individual interviews with MTs (n=6) at the end of the mathematics
methods semester. As with the PST interviews, participation was voluntary. At the end of
both the mathematics and the science methods semesters, we invited MTs to participate
in focus group interviews (6 participated in the focus group at the end of the mathematics
methods semester, and 5 participated the focus group at the end of the science methods
semester). Several MTs participated in both rounds of interviews. Both individual and
focus group interviews included probes related to MTs’ experiences in the joint learning
events. Questions included things such as:

• What was your experience in the joint learning events?

• How are these joint learning events events helpful for thinking about your own
science teaching? How are the events helpful for mentoring your PST?

All individual and focus group interviews were audio recorded and transcribed for
analysis.

Data Analysis. Analysis followed standard methods of analytic induction (Bogdan &
Bilkin, 2003). All transcripts were entered into a qualitative data analysis program
(Hyper Research) for coding. Both authors participated in the coding process. In the first
stage of the analysis, we each reviewed a subset of the transcripts, and created analytic
memos about PSTs’ and MTs’ perceptions about the joint learning events. Memos were
shared across researchers, and used to generate an initial set of codes. Coding categories
included ideas such as a) perceived benefits of session for the PSTs, b) perceived benefits
of the events for MTs c) perceived benefits of the session for both PST and MT, and d)
challenges or tensions. Each category had a series of subcodes. For example, subcodes in the perceived benefits for MTs category included a) supports inquiry stance towards teaching, b) supports learning about teacher education context, and c) supports learning about teaching practice. Researchers then applied these codes to a small set of transcripts, and met to discuss discrepancies in their coding. During these discussions, coding definitions were refined, and codes were collapsed and/or new codes were created as needed. For example, additional codes that attended to PSTs’ and MTs’ conceptualizations of their roles were added (personal orientation towards MT/PST roles, technical orientation towards MT/PST roles, and collaborative orientation towards MT/PST roles). This process continued (both researchers coding the same subset of the transcripts, and then meeting to compare and discuss codes) until no further clarification or refinement of the codes was needed. At that point, we recoded all transcripts (n=19) using the refined set of codes. To further establish reliability, 5 interviews were coded by both researchers. Next, we ran reports for single codes and sets of related codes (e.g., all subcodes in the benefits for MTs category) to identify patterns across participants, and relationships among codes (e.g., ways that particular perceived benefits might be aligned with particular orientations towards MT/PST roles). This analysis resulted in the set of findings reported below.

Findings

In this section, we describe several patterns that we identified across the participants in our study. This section is followed by a discussion of our findings and implications for teacher education practice and research.

Learning about PSTs’ World and Building Relationships. Both MTs and PSTs thought that the joint learning events, and in particular the sessions when one or several MTs joined the mathematics or science methods course either in a co-teaching or co-learning capacity, helped MTs to learn about PSTs’ world (the teacher preparation world), and to build relationships with PSTs. MTs talked about the insights that they gained by “learning about what the PSTs were learning,” and even described these insights as awareness of the PSTs’ “funds of knowledge.” For example, one MT, Celine noted:

"But I also like[d] coming in and co-teaching because it gave me, I got to see what the professors were putting in their heads and putting in their notebooks, so that way it kind of gives me a fund of knowledge for them when they come in the [elementary class]room, what they've had exposure to and what they were supposed to have exposure to so that you can kind of put that into, "Oh, oh you didn't have this [in methods], really? Because I remember [laughs]."

Celine viewed her enhanced understanding of the content of the methods course as useful to interactions with her PST in the field, because she knew what aspects of teaching and learning the PST had been “exposed to”.

MTs also emphasized the relationship building benefit of the joint learning events. They talked about how in traditional mentoring relationships, PSTs enter the elementary classroom space and learn about the MTs world, but that MTs rarely have opportunities to learn about PSTs, and their teacher education experiences. MTs felt that the ability to

1 Analysis is still ongoing, and we anticipate a broader set of findings when all analyses are complete. We report here on three sample findings.
“walk into their [PSTs] world” helped them to get to know the PSTs, and to begin to see them as “real people”, versus just as PSTS. For example, one MT, Pearl explained:

I think [the co-teaching of a methods course] was important … because it kind of helps us walk into their world and their reality and see what it's like for them. Usually, if you're like a mentor teacher, the PSTs are coming in and they're seeing your classroom and the way you're doing it. This was like me visiting them and it's their world, and I kind of liked that part of it. … I kind of wish more people could have got a chance to see that to make their PSTs like real people, because that relationship is kind of important, especially if you want, if you want to like talk to them and have them not be afraid that, to mess up or to explain what they're thinking and to work with you, kind of like a co-teacher at times. It's important that they become real. …. I liked looking at the things on the walls, the math bios and other little things. I just kind of liked looking at them because they kind of gave me a picture of the different PSTs in the room … their personalities.

Pearl felt that learning more about the PSTs’ world and their personalities helped MTs to build relationships with PSTs, relationships that were critical to honest, reflective conversations about the PSTs’ teaching practice.

PSTs also noted the relationship-building benefit of the joint learning events, although not as frequently as the MTs. PSTs noted that the joint sessions helped MTs to connect with them, and to gain an understanding of their experiences as PSTs. For instance, Zoe, a PST noted:

Zoe (PST): I just think it was really helpful [when MTs joined our methods course] because they were in our position either not too long ago, or even a long time ago and they could easily connect with us on a personal level. We could talk to them about what we’re learning and they could say, “Oh, I remember learning that.” We could talk to them about how they like their classroom and how they teach math to students so they could easily connect with us, which I though was really helpful to have.

PSTs valued these opportunities to connect with MTs on a personal level, and to feel like MTs could relate to their experiences. Interestingly, when MTs and PSTs spoke of the relationship-building benefit of the joint learning events, they almost exclusively referred to the sessions when small groups of MTs joined PSTs in their methods courses (versus the larger sessions, often held in the school library, that included all MT and PST participants). We return to this point in the discussion, but this distinction suggests that opportunities for MTs and PSTs to work together across different spaces - in particular in MTs classrooms and in PSTs methods courses - may be particularly generative for building the kinds of relationships and personal connections that participants viewed as supportive of MT/PST interactions.

Learning from MTs’ Practical Knowledge and Experience. Another theme that cut across MTs’ and PSTs’ perspectives was that MTs contributed practical knowledge, including stories, examples of lessons and “helpful tips” from their experiences teaching that enhanced PSTs’ understanding. Every PST commented on this benefit of the joint learning sessions. They saw MTs as “having the same views” or at least “aligned” views with the methods course instructors, but emphasized that MTs brought “a different perspective” - namely, their practice-oriented knowledge from the classroom. In some
cases, PSTs emphasized MTs’ knowledge and insights about curriculum, and in others their ideas about specific teaching strategies. One PST, Olivia explained:

It was actually really helpful to have different teachers that I normally don’t have come in and give us ideas and give us suggestions; okay this is what we do in science, these are some resources that [school district] has available, there was Georgia, she’s a 4th grade teacher at [school], and she just gave us all these hints about things you can do with your toolkits and all these resources that they have available that they don’t tell you about in the FOSS [science curriculum] kits, which was really cool.

Other PSTs echoed Olivia’s perspective that MTs brought practical knowledge of teaching that was not otherwise addressed in their methods courses. For example, Ariana noted, “I learned a lot about [MTs’] view points on curriculum and things like that. We didn’t really focus on that in [the methods] class.”

Some PSTs described how the MTs’ contributions served to make the ideas and concepts of the methods course “more real” because they came from “real teachers” who “were actually in the classroom.” For example, one PST, Zoe, contrasted comments from MTs, who from the PSTs’ perspective could tell actual stories of their students doing science, with comments from methods instructors who again according to the PST could only talk about how students might react to a particular lesson. Zoe explained that the MTs “first-hand experience” of how students react during different science lessons helped her to interpret students’ responses during a lesson. She explained:

It seemed when the science MTs were there, they provided us a lot of their own personal teaching experience; they had first-hand experience about teaching science and they could tell us actual stories about how their students reacted to different science lessons, and I think that's what really helped me the most because they made it more real in some ways to see how science is placed in the classroom instead of just the methods teachers telling us how students might react. …. Especially with the [outdoor, environmental science] lesson planning because they actually acted out how some students might act on the field trip, for example. And so when we actually went on the field trip, and the students acted that way, it was easier for me to [inaud] that situation.

This idea that MTs helped to make the course content more “real” by sharing stories and examples from their own classrooms was shared by numerous PSTs. Some were more explicit in their positioning of MT knowledge, explaining that MTs’ ideas and contributions helped her to judge the usefulness of the methods course content. For example, Olivia, a PST noted:

I think it was really cool to see what tools they use in their classrooms to promote science, and how useful some of these things that seem maybe not so useful to what we learn in [methods] class are actually going to be. Because it’s hard [for me] to know what you’re going to use in your classroom. But when you see another teacher having it as an example, it’s a lot better.

In addition to emphasizing how MTs’ examples helped PSTs to validate ideas and constructs from methods courses, comments such as Olivia’s also demonstrate that in general, PSTs perceived an alignment between methods and the field. This is not typical
of PSTs’ experiences in teacher education, and is a point we return to later in the discussion.

While PSTs were particularly emphatic about the value of MTs’ practical knowledge, MTs echoed these ideas in their own comments. MTs talked about wanting to provide PSTs with “a realistic perspective, a teacher’s perspective” during the joint learning events, something that for some MTs was absent in their own teacher preparation experiences. For example, Evan, a MT explained:

Well, I guess I wanted to … you know, teach the teachers coming up. … I just wanted to let them know a realistic perspective, you know, a teacher’s perspective because I think when I went to [university] and I took the methods courses …. I think the knowledge I gained wasn’t, I wasn’t immersed, it wasn’t real-world; I felt like it was a class. And so my goal was, you know, to … give them a more realistic experience. …. Because it would have been really helpful for me as a teacher. … I did that [when I came to the methods] them ask me questions, that was kind of like my goal, just to help out as much as I could.

Evan’s comments reflect a sense of responsibility to share his classroom-based knowledge and experiences with future generations of teachers - the teachers “coming up.” Other MTs expressed similar commitments to supporting PST learning, and also emphasized the unique, classroom-based perspectives that they contribute. They described numerous examples of practical knowledge and experience that they wanted to share with PSTs, such as the ability to look at a curriculum or a set of standards and “know what’s really important for kids to know,” (Pearl) or the understanding “that there are multiple ways to assess” and that you need “to know your students” to accurately interpret their work and understanding (Evan). In short, MTs felt that they brought a valuable and unique perspective to the methods course (one grounded in practice), and they looked forward to sharing their accumulated knowledge with PSTs. PSTs in turn welcomed MTs suggestions, ideas and “useful tips” about mathematics and science teaching, which they felt made the content of the methods course more real.

**Fostering Diverse Perspectives and Collaboration.** While not as prevalent as the two themes discussed above, another pattern in MT and PST perspectives on the joint learning events was that these events elicited diverse perspectives and created opportunities for collaboration among MTs and PSTs. Both MTs and PSTs commented on the benefit of working together on tasks, as each group of participants (MTs and PSTs) contributed unique and valuable ideas. For example, Celine, a MT, noted that she always learned from PSTs during these collaborative sessions because PSTs looked at tasks differently and contributed unique perspectives.

…. [the most useful] would probably be the joint sessions, having them [PSTs] around because they always look at it a different way and they have a different take on it and then they have a lot of questions. So you go through the questions [the questions guiding the collaborative activity, such as a curriculum analysis task, or a lesson planning task], you know like, "oh yeah, that is right."

Evan, another MT, added that more MTs should participate in joint events with PSTs, because “it’s important, because both sides [MTs and PSTs] can learn from each other.” PSTs shared similar comments. They felt that MTs benefited from their ideas, and, as
noted above, that they benefited from the knowledge and experience of the MTs. For example, Norma, a PST emphasized the productive exchange of ideas that occurred (between MTs and PSTs) when MTs joined them in their methods course sessions.

I think that I really enjoyed having [MTs] come into our class. We got to share our ideas. They got to share theirs, and they were very kind ….. They just brought amazing ideas in that I wouldn’t have thought about or known of if we didn’t have them come in. … but I think that they enjoy hearing our ideas and I definitely enjoy hearing their ideas.

Interesting in both of these comments (from Celine, Evan and Norma) is the emphasis on eliciting and learning from multiple perspectives, which was one of our primary aims in designing these spaces. Additionally, while not explicit in these comments, other participants who emphasized the value of bringing “different ideas to the table” talked about how the diverse perspectives supported their collaborative work. For instance, one PST, Trish described how she and her MT each contributed ideas as they worked together during a joint learning event to consider how they might implement inquiry-based science in the MTs classroom.

[My mentor teacher] helped me think about those ideas ’cuz she was pretty much learning these terms and these ideas [about inquiry science teaching] at the same time. She was excited to start to try and use them so we were both kind of learning and trying to implement them into our teaching. I think when you have somebody who’s been teaching for 25 years and then somebody who’s pre-service and they’re both learning the same thing at the same time, it brought a lot of different ideas to the table. Like I learned a lot from her. … We would come up with all these different ideas while everything was going on. It was like she would say something and then that would kind of get me going and sort of the same thing was happening for both of us. It was like - it was just a really good opportunity for the both of us to work on science together because there were a lot of ideas coming.

Although Trish’s perspective did not seem to be widespread, at least among PSTs, what we find particularly interesting is her emphasis on how she and her MT were both contributing ideas (“…. brought a lot of different ideas to the table”) that supported them in learning something new. Also important is that their collaboration was focused on a topic that was new to both Trish and the MT (inquiry-based science). It may be that such topics are particularly generative of collaborative, more egalitarian interactions among PSTs and MTs because the typical imbalance of knowledge and experience between PSTs and MTs is not as apparent. We return to this point in the discussion.

**Tensions Related to Positioning MTs and PSTs in Collaborative Roles.** While MTs viewed opportunities to collaborate with PSTs as generally positive, and while a few PSTs seemed to share this perspective (i.e., Trish, Ariana), other PSTs found interactions that positioned MTs and PSTs as co-learners to be problematic. In particular, a few PSTs noted that when MTs joined their methods courses not as co-instructors, but as colleagues who were learning along with the PSTs, and “chiming in” with their ideas, they found these sessions to be unproductive for their (PST’s’) learning. These PSTs seemed to prefer joint learning events that maintained the typical structure of a methods class, where PSTs were in the role of learners and MTs (along with methods instructors) assumed the role of teachers. For example, one PST, Olivia explained that she preferred joint sessions when
MTs shared planned presentations, contrasting these with sessions where the MTs joined the class as co-learners, or collaborators.

Just as examples, [one MT] really like walked through the steps of everything and he really, I think what helped the most was he sat down and he thought about what he wanted to talk to us about, probably with [the methods course instructor] he sat down, and then he sat down and he figured out how he wanted to say everything to us. … I just think hearing it from a teacher's experience, having like a planned presentation to us is really helpful, instead of when the other, like when the [other mentor] teachers were there, we were just looking at the manipulatives, and we, they were just playing the games with us. They didn't really add anything.

Polly, another PST, echoed this perspective, noting that she valued the times that MTs provided PSTs with explicit feedback (i.e., “their feedback was priceless”), but found other sessions less helpful. She felt that in order for her to learn from the MTs during the joint sessions, the MTs needed to come to the session with a particular objective in mind.

Yeah, because I don't know how else, I mean if you wanted us to be learning from them, I feel like they should have been more, like a scheduled, part of the program.

Zoe shared a similar preference for the sessions when “mentor teachers would actually talk to us instead of us, instead of them listening as well.” When MTs did come with prepared lessons, as in the example described above, these PSTs felt that these sessions were more focused on their learning and their needs as PSTs, which they appreciated.

For example, several PSTs shared that when MTs attended the sessions as learners, PSTs felt that the focus shifted to the MTs and their comments, conversations and questions. This left less time for PSTs to discuss their own ideas, or to raise questions about concepts that they did not understand. The diminished time for PSTs to talk and think through ideas then detracted from PSTs’ learning. For example, Olivia, commenting on one of the whole group joint sessions noted:

Like the first, like when we had the meetings with the mentor teachers, the meetings were geared, I felt like they were geared towards the mentor teachers, and not so much as us as the students which was very frustrating …. so I felt that when they [MTs] weren't there, we actually learned things.

Polly (PST) shared a similar perspective, claiming that she felt like she learned less during the whole group joint sessions, because “we were able to cover less in that one small amount of time, I think [laughs] everyone was less focused. … I feel like a lot of the [mentor] teachers you know, were the focus of the conversations.” While this tension around MTs’ roles during the joint sessions was not expressed by all of the PSTs in our study, Polly, Zoe and Olivia expressed a clear preference for sessions where MTs were positioned as teachers or instructors (i.e., experts), rather than as collaborative colleagues or co-learners.

**Discussion and Implications**

In this section, we summarize and discuss our findings and outline implications for future teacher education practice (including the use of joint learning events in our Beyond Bridging project), and research.

**Evidence of Personal Orientation Among PSTs and MTs.** While previous research has emphasized that PSTs prioritize relationships with MTs, and seek MTs who are sensitive to their needs and emotions (Rajuan et al., 2007), we found evidence of personal
orientation towards MT/PST interactions among both PSTs and MTs in our study. In fact, MTs in particular spoke about the power of the joint learning events in helping them to connect with and build relationships with PSTs, in particular the sessions when MTs joined the PSTs in their methods courses. MTs clearly valued these personal connections to PSTs, and saw such connections as supporting their ability to serve as mentors, a perspective supported by research (Stanilus & Russell, 2000). PSTs shared this perspective. Given that research has shown that productive MT/PST are difficult to achieve (Graham, 1997; Maynard, 2000; Stanilus & Russell, 2000), the fact that the joint learning events created additional opportunities to foster these relationships seems consequential. Moreover, the fact that both MTs and PSTs singled out sessions when MTs came to the methods classroom, versus sessions that occurred outside of the PSTs “world”, such as in the school library, suggests that place matters. For PSTs, the methods classroom is “their space” or as one MT noted, reflects “their world.” This is true even when the classroom is located on an elementary school campus as is the case in our project. The fact that joint learning events brought MTs into the PSTs’ space/world seems to be an important part of how the events supported relationship building between MTs and PST, and has implications for the design of joint learning events in the future.

**Collaborative Orientations and Embracing of Diverse Perspectives.** One of our aims in designing the joint learning events was to create opportunities to elicit and connect multiple discourses, such as the discourses of methods and the discourses of the field, in ways that support PSTs learning (Zeichner, 2000). Our findings suggest that at least some PSTs and MTs found the joint sessions productive in this regard; both groups of participants found hearing others’ perspectives useful, and some participants were even explicit that the diverse perspectives enhanced their collaborations (e.g., Trish). Moreover, participants talked not only about “different perspectives” as they compared the contributions of MTs, PSTs and methods courses, but they also spoke of “different perspectives” that were “aligned.” In other words, some PSTs and MTs seemed to be recognizing connections between these discourses, which once again, was a desired outcome of these events. Future research needs to examine how MTs and PSTs make connections among these multiple perspective and discourses in their talk, and the kind of sense making or learning that results. Other papers in this symposium are making important contributions in this area.

Moreover, comments from some PST participants suggested an embracing or tolerance for divergent perspectives that is not common among PSTs who often seek clear solutions to problems of practice (Graham, 1997). We see this finding as hopeful, because it suggests that joint learning events not only have the potential to elicit multiple discourses, but that some PSTs and MTs recognized the value in working together to consider and connect divergent ideas. That said, this recognition seems to require a collaborative, or educative orientation towards MT/PST relationships in that it positions MTs and PSTs as co-thinkers or co-inquirers into their teaching practice (Feiman-Nemser, 1998, 2001). While a few PSTs in our study seemed to reflect a collaborative orientation, more common were comments that focused on the value of explicit suggestions, tips, hints, and feedback from MTs. That is, while PSTs seemed ready to recognize and learn from MTs expertise, they were less explicit about how PSTs and MTs might work together to pursue new understandings. We elaborate on this contrast, and the tensions that it generated, in the next section.
Technical Orientations and Resistance of Joint Learning Events. An interesting tension that emerged in our analysis was that some PSTs seemed to resist collaborative MT/PST interactions, and in particular those where MTs were perceived to be in the role of a learner. It is unclear whether such collaboration or co-learning would be more acceptable to these PSTs if it occurred in the MTs classroom, as part of the field experience. What is clear is that these PSTs had particular expectations for their own and others’ roles during mathematics and science methods courses, and that these expectations seemed to align with an expert/novice, or technical orientation towards MT/PST relationships. These PSTs emphasized that the methods course was a “learning” space for them (consistent with their “student” role) and when MTs joined the class they expected the MTs to be in a teacher role, “instructing” the class in particular content. Conceptualizing roles in this way seemed to align with some interactions in the joint learning events, such as sessions when MTs provided PSTs with explicit feedback, or when they presented specific teaching advice. However, as evident in the comments of Olivia, Polly and Zoe, this conceptualization of MT/PST roles seemed to create resistance towards other activities, such as when MTs acted as collaborators or co-learners.

While prior research has not found a technical, or expert/novice orientation to be the most common way that PSTs conceptualize MT/PST roles (Rajuan et al., 2007), we do not find it surprising that a number PSTs in our study evidenced this orientation. Prior research has focused on MT/PST perceptions on mentoring interactions that occur in the field, whereas we examined their perceptions of interactions during joint learning events that occurred as part of methods coursework. In other words, while a technical orientation may be less prevalent when PSTs think about interacting with MTs in the elementary classroom, it makes sense that it is a more prominent orientation, at least for some PSTs, when they are considering interactions in a methods course where PSTs’ role clearly one of a learner.

This finding has clear implications for the design of joint learning events because it suggests that we need to attend to PSTs’ expectations for methods courses, in particular the expectation that the focus remain on their learning, which for some PSTs meant that instructors (including MTs) are responsible for taking on traditional “teacher” or “expert” roles. For other PSTs, this meant that conversations did not resolve around MTs and their ideas or dilemmas, but rather than PSTs had opportunities to discuss and reflect on their learning. When joint learning events invite participants to take on roles other than those of novice and expert, we need to be aware that this shift in roles may generate resistance as conceptualizing PSTs and MTs as collaborators and co-learners seemed to be challenging for some PSTs (and potentially for some MTs). This does not mean that we should not invite MTs and PSTs to take on more egalitarian, collaborative roles, as they seem to be critical for educative mentoring relationships (Feiman-Nemser, 1998, 2001). Moreover, it seems that positioning MTs and PSTs as co-inquirers, or “partners to solve problems of practice” has the potential to facilitate the kind of hybrid discourse that we envision in joint learning events; the comments of at least some of our participants suggest that this is true. Rather, attending to how PSTs (and for that matter MTs) envision their roles may help us to understand, and respond to, possible resistance towards activities that aim to elicit multiple perspectives and discourses.

Future research should continue to explore MTs’ and PSTs’ perspectives on joint learning events, and in particular, how such perspective shift, if at all, over time. In other
words, it may be that PSTs’ resistance to collaborative, co-learning interactions decreases over time, as PSTs transition from the role of student to teacher. Additionally, research should explore possible connections between MT and PST perspectives on joint learning events and their participation in those events. In other words, participants believed that joint learning events helped them to consider and in some instances connect multiple perspectives, but to what extent do we find evidence of multiple discourses and connections across discourses in their conversations? Juxtaposing PSTs’ and MTs’ perceptions of joint learning events alongside examples of their interactions in joint learning events is critical to our understanding of how to refine those events in the future.


