Socio-Emotional Dynamics in Teacher Learning

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Abstract: The large body of research on teacher learning focuses primarily on cognitive dimensions, often to the neglect of socio-emotional dynamics. Taking a socio-cultural approach, emotions may be viewed as a social construct, entangled with positioning and identification processes, relative to others as well as to ideal concepts of knowing, learning, and teaching. Emotions can be displayed in social interaction both verbally and non-verbally, explicitly and implicitly. This symposium presents four studies using a variety of discourse analysis methodologies to study socio-emotional dynamics in a range of professional development contexts: pre-service teachers in a science content and pedagogy course, science teachers within a blended-online program, math teachers in video-based debrief conversations, and elementary/middle school teachers in school-based team meetings. The findings of the four papers shed light into the critical role socio-emotional dynamics play in teacher professional learning, revealing different kinds of dynamics appearing in a broad range of topics.

Keywords: Teacher learning, professional development, emotions, discourse analysis.

Introduction

The large body of research on teacher learning focuses primarily on cognitive dimensions, often to the neglect of socio-emotional dynamics (Hargreaves, 1998). Teacher emotions have been investigated vis-à-vis their *teaching* – e.g., novice teachers' emotions as they struggle through their first years, and veteran teachers' emotions as they experience burnout (Schutz & Zembylas, 2009). However, emotional dynamics in teacher *learning* and the role they play in professional development (PD) have seldom been investigated (Uitto et al., 2015). This is surprising considering the growing body of research on student emotions in academic settings, repeatedly demonstrating the critical role emotions play in learning processes and outcomes (Pekrun & Linnenbrink-Garcia, 2014).

In the field of teacher learning, many acknowledge the socio-emotional challenges teachers face in preservice training, in continuing PD programs, and in workplace learning. For example, while advocating for collaborative reflective inquiry, scholars note the challenge of overcoming anxiety, insecurity, and embarrassment when teachers share their practice with colleagues or critically deliberate about each other's work (e.g., Borko et al., 2008; Zhang et al., 2011). However, such challenges are rarely a central object of research attention.

Socio-emotional dynamics are seldom the focus of investigation in the learning sciences in general — and in the study of teacher learning in particular — partly because of tendencies to dichotomize reason and emotion (Boler, 1999) and to prioritize the rational over the emotional. It also stems from the ambiguous nature of emotions and the difficulty of capturing them. Most educational research on emotions draws on psychological approaches that view emotions as internal and individual constructs that learners express or reflect on. Taking a socio-cultural approach, emotions may be viewed as a social construct, which is performed within moment-to-moment interaction, as social relations unfold. From such a perspective, emotions are co-constructed, entangled with positioning and identification processes relative to colleagues and coaches, as well as to ideal concepts of knowing, learning, and teaching (Boiger & Mesquita, 2012; Zembylas, 2005).

Emotions can be displayed in social interaction both verbally and non-verbally, explicitly and implicitly. They can be expressed, for example, through facial expressions, gestures, laughter, intonation, and prosody. However, based on a psychological paradigm, most educational research on emotions draws on self-report data, though increasingly researchers combine self-reports with observational data, including analyses of facial

expressions and psychophysiological measures. While such methods contribute much to the understanding of academic emotions and have recently been employed also to study teacher learning (e.g., Chang et al., 2018), they are limited in their ability to explicate socio-emotional dynamics as they unfold in context.

This symposium emerges from growing interest and inquiry into the emotional and social dimensions of teacher learning through a sociocultural perspective. It brings together scholars who are active in this emergent area of research to present recent findings yielded by different modes of inquiry in different PD contexts. Collectively, we discuss the following questions:

- How can socio-emotional dynamics be conceptualized, observed and analyzed in teacher professional learning, and how can (or should) they be distinguished from cognitive processes?
- How do socio-emotional dynamics evolve, and what may explain their involvement in teacher learning? How do they shape — and how are they shaped by — different features of the PD context? How do they afford or constrain professional learning?
- How might we apply insights from research on socio-emotional dynamics to support teacher learning?

Collectively, the studies in this symposium use a variety of discourse analysis methodologies to study socio-emotional dynamics, such as interaction analysis, critical discourse analysis, linguistic ethnography microanalysis, and quantitative discourse analysis. The set of presentations also covers a range of PD contexts: pre-service science teachers in a graduate-level science content and pedagogy course; science teachers in a blended-online PD program; math teachers a video-based co-inquiry cycle; and elementary and middle school teachers in in-school meetings. The findings of the four papers shed light on the critical role that socio-emotional dynamics play in teacher professional learning, revealing different kinds of dynamics appearing in a broad range of topics: (1) Emotional tensions between informing and upsetting students when learning to teach climate change; (2) Interactional work involved in negotiation of epistemic norms around what it means to engage in science in online PD; (3) Negative emotions involved in revealing disjunctures between sense of pedagogical responsibility and classroom practice in coaching conversations; and (4) Aggravated disagreements involved in blame attribution for poor student behavior or achievement, in workplace learning.

Emotional tensions in learning to teach climate change

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The role of emotions in teachers' instructional decisions is well documented (e.g., Rivera Maulucci, 2013). Yet, less is understood about the emotional dynamics between teachers, the science they teach, and their perceptions of students' emotions. As such, this study explores the emotional tensions pre-service science teachers' experience as they make sense of learning to teach climate change.

Theoretical framework

As part of their evaluative nature, emotions are mechanisms to make sense of experiences in relation to one's personal goals (Barrett, 2017), including science teaching (e.g. Zembylas, 2002). Drawing from theories of teacher learning that account for both the situatedness as well as the sociocultural and historical structures and experiences that influence learning and development (Feiman-Nemser, 2001; Kang et al., 2013), this study examined the ways in which pre-service science teachers navigated learning to teach climate change. Since pre-service teachers' beliefs are often incongruous with what teaching entails in practice (Feiman-Nemser, 2011), attending to their emotions as they unpack their beliefs while learning to teach science makes salient the tensions they experience as they make sense of both the science and teaching of climate change.

Methods

Since emotions are both represented by and representations of the discourse in which they are expressed, framing the study in interactional ethnography and sociolinguistics (Hufnagel, 2019) provided a means to capturing what members of a group understood to be significant experiences (Emerson et al., 1995) around emotions. This approach relies on systematic analysis of data, iteratively and abductively, in order to zoom into particular moment-to-moment interactions that are embedded in how members of a group construct knowledge, identity, and affiliation (Agar, 2006).

Data were collected in a graduate course about teaching climate change to secondary students at a public university in the Northeastern United States. The foci of the course were two-fold: to increase student knowledge about both climate science and pedagogies, and to provide specific strategies for teaching secondary students about climate change (i.e., framing, affect, intergenerational learning, and nature of science). Seven students enrolled in the course participated in the study. All class meetings as well as interviews at the beginning and end

of the course were video-recorded. All artifacts from the course were collected, including models constructed by groups and individual written assignments. Detailed field memos were recorded after each class meeting.

Using the field memos, I identified bounded lessons and assignments with emotional expressions in the classroom discourse. In order to identify emotional expressions, I attended to semantics, contextualization, and linguistic features of the discourse. I constructed event maps, with key events (Kelly & Chen, 1999) that shaped the emotional discourse in the classroom. I "zoomed" into those discourse events and artifacts to examine the emotional expressions closely, developing a coding scheme by performing iterative and abductive analyses of the data sources (Hufnagel, 2019), whereby each emotional expression was analyzed for topics (i.e., what they were writing about). These topics were grouped into broader themes.

Central findings

Throughout the course, the pre-service teachers' emotional expressions about climate change were entangled in multiple tensions. For the sake of brevity in this proposal, two inter-related tensions are briefly described here separately: not wanting to upset others, particularly future students, and navigating their role as science educators with the social dimensions of climate change.

In both class discussions and on written assignments, the teachers expressed worry about teaching climate change to students who are skeptical it is anthropogenic. This anticipation of future interactions stymied them, as they shared exasperation that "science is no longer taken as truth" [Matt] or that "people do not understand science" [Nadine]. Yet, wondering how to "get them [future students] to understand that science is real. And climate change too" because "if they don't then we are really in more trouble" [Gene]. The teachers were concerned about "help[ing] them [students] understand without angering them or their parents" [Violet] and recognizing that "their [students'] identities can be wrapped up in their views of climate change" [Miranda].

While the pre-service teachers expressed their discomfort with the potential conflicts of teaching climate change, they also shared tensions about "moving too far away from the science in a science classroom" [Matt]. Embedded within this tension was the teachers' elevated view of themselves as scientists, whereby because "we are scientists…we understand [climate change]" [Nadine] and "as scientists, we know the truth" [Gene]. However, the teachers also recognized that "understanding the science of climate change is not enough" [Nadine] and that they "don't want to leave them [their students] depressed" [Carmen] without addressing actions. But how to "teach about actions without pushing a viewpoint on them" [Miranda] was evasive to them.

Significance

The findings from this study suggest that teachers of science are navigating social, cultural, and political complexities as they learn to teach climate science. Since emotions indicate personal relevance (Boler, 1999), the teachers' emotions highlight how their identities as developing science teachers are fraught with tensions and uncertainties that intersect with both their own learning about climate change and goals for science teaching. Examining pre-service science teachers' emotional stances toward the disciplinary ideas of climate change as well as how to teach them is vital to understanding how to support them in teaching climate change. While the teachers in this study expressed emotions about various aspects of learning and teaching about climate change, questions about how emotions may or may not be indicative of a more sophisticated understanding of disciplinary ideas, such as climate change, requires exploration.

"I felt stupid quite honestly": Socio-emotional dynamics in science teaching professional development

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We examine how affective and relational dynamics between professional development (PD) facilitators and teachers manifested and became consequential to teachers' participation within a blended-online science PD program. While in another study we examined the nature of tensions within PD interactions (Finkelstein, Jaber, & Dini, 2019), here we focus on one teacher, Dione, and ask: *What were salient emotional and relational dynamics in Dione's PD experience? How did the facilitators' attention to those dynamics become consequential for Dione's learning?*

Research context

The data come from a three-course blended-online PD program designed for upper elementary and middle school teachers to engage in scientific inquiry starting from their "everyday thinking" (Einstein, 1936). While most interactions occurred asynchronously, participants and PD facilitators met in person almost every month. While

teachers initially expressed excitement about the PD work, numerous tensions arose quickly, and facilitators planned to open discussion to these matters in the in-person meeting described here.

Theoretical framework and analytical approach

We draw on critical discourse analysis (CDA; Fairclough, 2013) to theorize the affective and relational work happening in PD. As theory, CDA allows us to examine PD dynamics through the critical lenses of power and positioning and to understand how these dynamics get continually negotiated through interactions. Issues of power and positioning are especially salient in science PD in which facilitators challenge traditional conceptions of science learning and the acquisition of knowledge.

We focus on instances where teacher Dione raised problems — what Horn (2007) calls Episodes of Pedagogical Reasoning — and employ a synthesis of approaches to discourse and conversation analysis (Fairclough, 2013; Gee, 2004; Hall & Stevens, 1996; Schegloff, 1992) to make visible the affective and relational dynamics at play within the PD interactions. Examination of these dynamics is supplemented by analysis of interview transcripts and online posts by Dione.

Central findings

The following episode provides an overview of the more detailed discourse analysis conducted in this study. In the in-person meeting, the facilitators asked teachers to provide feedback on the program, and Dione was the first to share. She expressed her disaffection with the extensive science discussions: "you asking us to think for three weeks about a helium balloon, I was DONE with that." Dione raised logistical concerns and confusion with the online platform response options: "there's the forum, there's the journal, there's the notebook." Dione finally reflected on feelings of inadequacy in science in comparison to peers whom she was trying to "keep up with" only to find they were "WAY over my head," causing her to "stop reading […] because I felt stupid quite honestly."

Multiple teachers responded to Dione's utterance, primarily offering agreement about the online logistics and empathy for how she was feeling. Five minutes later, one facilitator spoke to address aspects of Dione's concerns. He explained that being unable to understand another's idea ought not make one feel "stupid," but instead indicates that the person presenting the idea may need to express it more clearly. In this way, the facilitator sought to redefine participants' notions of "smart" and "stupid," challenging their portrayals of science expertise.

While it is difficult to definitively claim how facilitators' moves were received by teachers, we have evidence to suggest that they were consequential to Dione's engagement. For example, after this meeting, Dione emailed the facilitators, noting: "I just wanted to thank you for class today. I left feeling renewed and ready to take on the next few weeks. I appreciate your patience and open-mindedness to all that has gone on this semester. I'm looking forward to what's upcoming!"

As the PD courses continued, Dione took a lead role in animating science discussions, responding to and challenging her peers' thinking. In an interview during the second semester, Dione, unprompted, referenced the in-person meeting as critical for her continued engagement: "if we didn't meet it wouldn't have been okay […] if we didn't have two hours of talking about how people don't feel comfortable." In her final reflection, Dione again referred to her initial struggles and the role that the facilitators played early on to help her reframe her experience: "Initially I felt I wasn't going to make it through the classes. […] I don't think any of us "got it" until about 4-5 weeks into the first class [referring to the in-person meeting], [it] was the turning point for all of us I think."

Significance

We provide insight into the central role that affective and relational dynamics play within PD and the interactional work needed to effectively attend and respond to those dynamics. We find that these include, in particular, the negotiation of epistemic norms around what it means to engage in science. Intentional affective and relational work, our study shows, is consequential to teachers' engagement in learning opportunities within science PD. This work highlights the need for teacher educators to receive support in addressing affective and relational dynamics in PD interactions in order to foster teachers' productive engagement. Additionally, with the rise of online teacher PD, research into ways of responding to teachers' affect and interactional dynamics online is warranted.

"This is HARD": The role of emotions in coaching conversations

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Instructional coaching has become a common strategy to support in-service teacher learning. With the focused attention on the details of their practice, teachers often describe instructional coaching as a vulnerable experience, yet this emotional reality is mostly overlooked in research on instructional coaching and other forms of

professional development (Darling-Hammond et al., 2009; Uitto et al., 2015). In this study, we seek to bring research in line with teachers' lived experience, examining the role of emotions — particularly negative ones — in mathematics instructional coaching.

Conceptual framework

We draw on three ideas about teacher learning to account for the vulnerability teachers often experience during instructional coaching: *sensemaking*, *pedagogical judgment*, and *teacher identity*. In describing sensemaking, Coburn (2001) argues that teachers need opportunities for deep engagement, time, and structure to construct their understandings and integrate new practices into the classroom. However, as Boler (1999) contends, this sensemaking involves shifts in beliefs, which are inherently uncomfortable — and therefore emotional.

Teachers' discomfort may surface during coaching, in part, through the process of uncovering and questioning their pedagogical judgment (Horn, in press). Pedagogical judgment is comprised of (1) pedagogical action supported by (2) pedagogical reasoning and rooted in (3) pedagogical responsibility. During coaching, teachers may be pressed to explain their actions. However, these actions may not be rooted in clear reasons, leaving teachers vulnerable; or, they may have reasons, but these reasons do not reflect teachers' broader sense of responsibility, leading to discomfort. In these instances, coaching may reveal misalignments between teachers' sense of commitment — their *pedagogical responsibility* — and the narrative identities they cultivate. Drawing from Chen and colleagues (2018), we conceive of teachers' narrative identities as the stories they tell about themselves and this misalignment often surface negative emotions.

Research context and focal case

Our data come from a larger study that seeks to support experienced secondary mathematics teachers' development of ambitious instruction. Through a partnership with a professional development organization (PDO), the research team developed a Video-based Formative Feedback (VFF) cycle. VFFs begin with teachers' questions and instructional goals. The research team observes and records instruction, collecting audio of students' small-group conversations, video of classroom interactions, and other artifacts. Within two days, participating teachers debrief the lesson with the research team. During debriefs, video and audio recordings are shared, often revealing disjunctures between pedagogical actions, reasoning, and responsibility.

To understand the role of emotions in instructional coaching, we identified a focal case for closer analysis. Lizette McLaughlin (pseudonym) is an experienced and committed high school math teacher in a large U.S. school district. She had a highly emotional moment during a VFF debrief, which she leveraged for her learning. Though many other teachers experienced intense emotions during VFF cycles, this was our only debrief to end in tears. We conceptualize this critical event as an extreme case (Yin, 2017) of a common phenomenon.

Methods

Using sociolinguistics (Hymes, 1974) and interaction analysis (Jordan & Henderson, 1995) methods, we analyzed video and transcript of the VFF. In particular, we attended to Lizette's sensemaking (e.g., "That's a lot to think about"), emotions (e.g., "I'm just overwhelmed"), and affect (e.g., tone of voice). Throughout the analytic process, we conducted member-checking interviews (Lincoln & Guba, 1985) with Lizette to inform our interpretation of the focal event and its outcomes; this is particularly important given our dual role as coaches in the VFF cycle.

Central Findings

When supported, negative emotions can motivate teachers to adopt new practices, reconstructing their teacher identities. Lizette's central question for the VFF reflected a core part of her pedagogical responsibility: Do students have equitable access to math content during groupwork? Yet this came into conflict with Lizette's pedagogical actions: She quietly circulated during groupwork, intervening only when groups needed more support. This approach was successful in prior VFFs with smaller classes, but it became unmanageable among 42 students. Approaching each of the 11 groups individually took time, and some groups were unable to engage with the content for much for the class period. As we reviewed video, Lizette heard her students' frustration and began to blame herself. She became visibly upset and left the room crying. Lizette's intense emotional response arose out of a threat to her teaching identity, as her actions showed an unexpected conflict with her deeply-held commitments to supporting student sensemaking around rich mathematical tasks.

The next day, however, Lizette sought our feedback to brainstorm strategies for managing her large class. We discussed strategies for whole-group supports that Lizette had heard of, but had not seriously considered because she thought they were incompatible with her teaching practice. After addressing these concerns, Lizette implemented these strategies, bringing her pedagogical responsibility and actions back into alignment. Notably, her initial resistance to — and eventual acceptance of — these strategies suggests a shift in her teaching identity.

Significance

As a human improvement profession (Cohen, 2011), teaching is often emotional work; indeed, many participating teachers described intense emotions during VFFs. This analysis offers a framework to understand one source of emotionality in instructional coaching conversations, with the aim of humanizing professional development. Acknowledging, analyzing, and understanding the role of teachers' emotions in their learning highlights the importance of psychological safety and trust in productive teacher learning efforts.

"I really, really don't agree": Aggravated disagreements in teacher on-the-job learning

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Significant teacher professional learning happens on the job, as teachers discuss their day-to-day work with their colleagues (Horn, 2007). This study examines the role of teacher disagreements about pedagogical issues in such learning processes. We focus in particular on participants' relative tendencies to aggravate disagreements (Netz, 2014) and the implications of aggravation for socio-emotional dynamics, face-work, and participants' willingness to share and reflect on their practice. Previous research on teacher discourse has described teacher avoidance of disagreement and criticism (Hargreaves, 1994), and in particular their avoidance of explicit and aggravated disagreements (Dobie & Anderson, 2015), which are considered to be detrimental to team solidarity (Achinstein, 2002). On the other hand, Dobie and Anderson (2015) suggest that explicit, direct disagreements can lead to more reflective, sustained, and multi-voiced discussion. We explore this tension between the potential value of explicit disagreement for teacher learning on the one hand and the threat such disagreements pose for socio-emotional dynamics on the other hand. Specifically, we ask: (1) How frequently and under what conditions do teachers mitigate or aggravate disagreements? (2) How do aggravated disagreements shape socio-emotional dynamics? (3) What are the implications of aggravated disagreements for teachers' on-the-job learning?

Theoretical framework

We adopt a socio-cultural perspective for exploring discourse and interaction in teacher on-the-job learning. Accordingly, teacher teams are viewed as communities of practice, learning as contextual, and participants as positioned through interaction (Lave & Wenger, 1991). We draw upon preference organization (Pomerantz, 1984) and politeness (Brown & Levinson, 1987) theories, which consider public, direct disagreement as threatening interlocutors' face and team cohesiveness. However, acknowledging that disagreements and their interpretation are shaped by cultural and institutional contexts (Blum-Kulka et al., 2003), we examine how culture, context and participants' goals shape the development of aggravated disagreements and their implications for learning. Aggravated disagreements involve direct, explicit contradiction, competition for the floor, and intensification of involvement (e.g., through raised voices and rapid speech). Mitigated disagreements, in contrast, involve implicit, softened contradiction, hedging, and face-work (Netz, 2014). We view aggravated speech as an expression of high emotional involvement, which also tends to evoke an emotional response among interlocutors.

Research context and methods

The data for this study were collected between 2014 and 2017 as part of a design-based implementation research project, aiming to develop teacher leadership and pedagogical discourse in teacher team meetings. Leading teachers participated in a professional development workshop in which they were introduced to facilitation tools such as conversational protocols. The research team observed and recorded in-school team meetings facilitated by the leading teachers. We randomly chose for analysis two meetings from each team that we observed three or more times, resulting in a corpus of 46 meetings from 23 teams in 19 elementary and middle schools. The analysis included four stages: (a) identifying disagreements; (b) coding aggravation or mitigation according to a three-level scale based on Netz (2014); (c) testing for statistical correlations between aggravation and other variables such as disagreement duration and stakes (presented elsewhere, see Trachtenberg-Maslaton et al., 2018); and (d) linguistic ethnographic microanalysis of six aggravated disagreements to further explore the specific conditions under which aggravated disagreements develop, and their implications for learning.

Central findings

Teacher disagreements in our corpus were more explicit and less mitigated than the general tendency described in the literature (Table 1). We found a high rate (31%) of aggravated disagreements. Aggravated disagreements, on average, were longer than mitigated disagreements, included more reasoning, and tended to revolve around high-stake issues, which required joint decision-making and/or posed immediate consequences for teacher

practice. Finally, most aggravated disagreements (78%) involved discussion about how to attribute blame for poor student behavior or achievement.

We identified three types of blame attribution: (1) personal blaming of one team member; (2) collective blaming of all team members; and (3) external blaming of forces or people external to the school. Aggravated disagreements in our corpus were not necessarily detrimental for teacher learning or group solidarity. However, in cases in which aggravated disagreements were associated with one of these forms of blame attribution, they led to problematic socio-emotional dynamics between team members and created new relationships and boundaries between teachers. In some cases, participants formed a coalition against one group member, while in others they united to protect one teacher. These aggravated disagreements were characterized by intensive face-work and fewer instances of participants sharing knowledge, justifying claims, or explaining ideas.

Table 1: Distribution of aggravated and mitigated disagreements

Mitigation - Aggravation	Number	Percentage
Level 1: Mitigated	14	9%
Level 2: Neither mitigated nor aggravated	88	60%
Level 3: Aggravated	45	31%
Total	147	100%

Significance

This study expands our understanding of the socio-emotional dynamics of disagreements in teacher on-the-job learning. Specifically, the literature shows how aggravated speech and blaming can lead to problematic socio-emotional dynamics, thereby constraining teacher learning. We suggest that disagreements, even aggravated ones, may support teacher learning if teachers explicitly acknowledge the diversity of their ideas and try to make sense of them, rather than personally attacking each other and assigning blame. These findings can inform professional development for facilitators of on-the-job learning processes vis-à-vis the management of teacher disagreements.

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