"Maybe It's a Status Problem." Development of Mathematics Teacher Noticing for Equity

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Abstract This chapter proposes an aspect of *teacher noticing for equity,* bringing together ideas from literature related to educational equity and to the social nature of teacher learning. It argues two points and offers methods for empirical study to investigate them. First, it argues for an important direction for the study of teacher noticing that supports equitable instruction: noticing of the social system of the classroom within which power dynamics operate. Second, it argues that the development of this type of noticing for equity can be supported through purposeful, work-embedded interactions. It offers methods for the study of this development, and exemplifies those methods using data from a case study of teacher learning through conversations with an instructional coach, which take place in the context of an equity-focused professional development project.

Keywords Equity · Discourse · Teacher learning · Sociocultural theories of learning · Discourse analysis

This chapter considers teacher noticing in light of lessons learned from scholars concerned with, first, educational equity, and, second, with the social nature of teacher learning. It builds on the work of scholars concerned with educational equity, who have focused our attention on inequitable distribution of power, which takes place within classrooms and creates barriers to meaningful learning for some students (Boaler, 2008; Boaler & Greeno, 2000; Cohen & Lotan, 1997; Nasir & Hand, 2008). The chapter also builds on the work of scholars who have focused our attention on teachers learning in and from interactions that are intimately tied to their own teaching practice (Grossman, Wineburg, & Woolworth, 2001; Horn, 2005; Little, 2002; McLaughlin & Talbert, 2001; Wenger, 1998). Bringing these ideas together, this chapter argues two points and offers methods for empirical study

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to investigate them. First, I argue for an important direction for the study of teacher noticing that supports equitable instruction: noticing of the social system of the classroom within which power dynamics operate. Just as noticing of student thinking allows teachers to build appropriate responses to that thinking (Sherin et al., 2011), noticing of the social organization of the classroom supports teachers to respond appropriately. When teachers recognize classrooms as social systems within which power dynamics operate (rather than just collections of individual students and a teacher), they can attend to reconfiguring these social systems in ways that create more equitable access to opportunities for students to learn and to construct identities as competent doers of mathematics. They can intervene in status and power issues only when those issues are recognized for what they are (and not, for example, interpreted as individual students lacking motivation or desire to learn).

Second, I argue that the development of this type of teacher noticing for equity can be supported through purposeful, work-embedded interactions. I offer methods for the study of this development, and exemplify those methods using data from a case study of teacher learning in the context of an ongoing, equity-focused professional development project.

Background and Theoretical Perspectives

Teacher Noticing

Sherin et al., (2011), in their summary of the field of mathematics teacher noticing to date, describe teacher noticing as consisting of two interrelated and cyclic processes in which teachers engage: (1) selecting particular phenomena for attention "from the blooming, buzzing confusion" of classroom life and (2) making sense of those phenomena. Some scholars (Jacobs, Lamb, Philipp, & Schappelle, 2011; Kazemi et al., 2011) further articulate the sense-making process as encompassing subprocesses of interpretation and response. These conceptualizations offer a three-part understanding of teacher noticing: (1) selecting particular phenomena for attention, (2) interpreting those phenomena, and (3) responding accordingly. It is important to note that teacher noticing is not understood as a passive process;[1] rather it takes place as teachers act and interact in and out of classrooms. And, while it may be analytically useful to consider the three

[1]These processes are also deeply situated; they are done by individuals (alone or together), each of whom carry particular constellations of resources, orientations, and goals (Schoenfeld, 2010), and whom are embedded in classrooms, schools, local and extra-local cultural and historical contexts, each of which must bear heavily on noticing that takes place in classrooms. This chapter foregrounds processes of noticing as they take place in the context of teachers' work-embedded interactions, and thus backgrounds psychological or cognitive conditions that undergird the noticing that takes place.

subprocesses of teacher noticing separately, the relationship among them has yet to be established, as does their degree of mutual distinction. They are seen as interrelated and cyclic (Sherin et al., 2011) and it stands to reason that shifts in any of these three component processes of noticing may have implications for the others. For example, if a teacher comes to interpret a particular phenomenon in new ways, she may also choose new responses to that phenomenon. These changes may lead to changes in which phenomena she selects for attention in the future. In fact, research does show that when teachers become skilled at attending to and interpreting student thinking, they become more adept at designing instructional responses that build upon and extend that thinking (van Es & Sherin, 2008).

Furthermore, research suggests that professional vision (Goodwin, 1994) and in particular teacher noticing (van Es & Sherin, 2008) is, at least to some degree, trainable. That is, practitioners can be supported purposefully to develop new and more productive ways of noticing. As Sherin and colleagues point out (Sherin et al., 2011), there is much more work to be done to uncover potentially productive ways to support the development of various aspects of teacher noticing.

In the following sections, I describe findings from literature related to *equity* in education and to *teacher learning through interaction* that illuminate the utility of *teacher noticing for equity* as a construct of focus.

Equity

For many years, researchers have exposed gaps between demographic groups in various measures of achievement. Federal education policy (No Child Left Behind [NCLB], 2003) brought these achievement gaps to the center of mathematics education conversations on every level, from faculty meetings in school libraries to conversations that shape local, state, and federal education policy. However, focus on these sorts of gaps (or "gap-gazing") has been critiqued as reifying discourses that position students from nondominant groups as deficient and offering little guidance for policy makers or practitioners concerned with improving teaching and learning and working toward equity (Gutiérrez, 2008; Martin, 2003).

In the late 1980s and early 1990s, scholars offered a shift in focus from *achievement gaps* to *opportunity gaps* (Gamoran, 1987; Oakes, 1990), exposing patterns of students' unequal access to resources such as advanced courses, qualified teachers, adequate facilities, and textbooks. These scholars expanded the field's focus from distribution of desirable outcomes to include distribution of supportive inputs (i.e., various kinds of opportunities for learning). This broadened view supports the design of policy-level responses that involve the redistribution of access to the opportunities that are identified as important and inequitably distributed.

As the field became interested in understanding the opportunities for learning available (or not available) to students, scholars began to investigate how these opportunities are afforded and distributed within classrooms. Key findings suggest that widely distributed access to meaningful learning can take place when students work together on challenging tasks, when they are held accountable to their own and each others' learning, and sense-making is valued over answer getting and prior achievement (Boaler & Staples, 2008).

Other scholars began to attend to opportunities students were afforded to construct particular kinds of identities in mathematics classrooms and the relationships between the social structure of classrooms and the distribution of these opportunities (Boaler & Greeno, 2000; Horn, 2008; Nasir & Hand, 2008). For example, Boaler and Greeno (2000) found that discussion-based mathematics classrooms in high schools supported students to author identities as creators of mathematical ideas and to choose to continue their studies of mathematics. In contrast, students in didactic classrooms tended to author identities as received knowers of mathematics (which was generated outside of themselves) and fewer of these students chose to continue their mathematical studies. Nasir and Hand (2008) found that classroom-level supports such as clear expectations and feedback, opportunities to take on integral roles, and opportunities for self-expression supported students to view themselves as competent members of the domain (the domains in their comparative study were classroom mathematics and participation in the activities of a high school basketball team) and that these sorts of opportunities were unevenly distributed among students. From these scholars, we learn that the ways in which classroom environments are structured, and the supports that these structures offer for students, matter for the distribution of opportunities for students to learn and construct positive disciplinary identities.

Unequal distribution of status and power in classrooms is a significant barrier to equitable access to opportunities both for learning and for developing positive identities. Cohen (1997) argues that societal structures, such as unequal power relations and hierarchical narratives of competence, travel with students and teachers into classrooms. Students and teachers enter classrooms with differential expectations for their own and each other's competence. These expectations are deeply cultural in that they are rooted in the cultural discourse relevant to particular communities (rather than being the creative products of isolated individuals). They influence patterns of participation and have important consequences for students' opportunities for learning and for developing identities of competence.

This perspective suggests that classroom-level interventions aimed at increasing equity must attend to the social and cultural nature of classroom environments and the ways in which status and power operate in these environments to afford and constrain important opportunities for students. Supporting teachers to attend to and

make sense of the social and cultural nature of classroom life is an important aspect of an agenda for improving teaching and learning. This chapter considers ways in which work-embedded interaction can support teachers to learn to notice the social organization of classrooms. The following section considers learning and, in particular, teachers' learning in the context of work-embedded interaction in order to ground the empirical investigation of the development of teacher noticing that follows.

Teacher Learning in Work-Embedded Interactions

Lave and Wenger (1991) focus the attention of learning scientists on the deeply situated, cultural nature of learning. Wenger (1998) further articulates a theory of learning that includes the ongoing negotiation of meaning, in which people, in the context of communities of practice, continually negotiate and reify meaning. In Wenger's theory, the negotiation of meaning in and about practice among participants engaged in that practice takes place continually and is an essential component of learning. It is important to note that this omnipresent negotiation of meaning is unpredictable in nature; there is no guarantee that the meanings that are negotiated will be of any particular sort. It follows, then, that people embedded in practice (which all people are) continually engage in learning and that only some subset of that learning will satisfy observers as "good" learning, or the learning that we might hope takes place to support any particular outcome.

Scholars concerned with teachers' learning, and with instructional improvement more generally, have distinguished teachers' work-embedded interactions as important sites for their learning (Grossman et al., 2001; Horn, 2005; Little, 2002; McLaughlin & Talbert, 2001). Consistent with Wenger's ideas about learning, scholars have found that attending to teachers' ongoing negotiation of meaning in the context of work-embedded interactions is fruitful for understanding the opportunities that teachers have to learn in productive ways. For example, we know that the nature of work-embedded interactions has consequences for the opening or closing of important opportunities to learn (Little, 2002) and that particular norms for interaction are consequential for the kinds of learning available to participants (Grossman et al., 2001; Louie, 2016).

Also consistent with Wenger's articulation, scholars have found that teachers' learning in the context of naturally occurring, work-embedded interaction does not always support excellence or increased equity in classroom instruction. McLaughlin & Talbert (2001) and Horn (2005) found that teachers' work-embedded interactions in some cases support resistance to reforms or more exclusive and less equitable instruction.

These findings teach us that it is important to be clear about what kinds of learning we mean when we talk about teacher learning. Certainly, while teachers' solidifying their tendencies to label students as fast, slow, or lazy (Horn, 2007) is a kind of learning, it is not the sort of learning that supports instructional improvement. In this chapter, I investigate processes by which teachers learn to notice classroom phenomena in ways that position them to offer more equitable instruction. The learning attended to here, then, is the ongoing negotiation of meaning likely to support this sort of instructional improvement. As we glean from the equity literature, an important goal for this kind of teacher learning relates to developing teachers' facility with noticing the social and cultural dimensions of the classroom. This chapter investigates learning consistent with this goal.

Development of Mathematics Teacher Noticing for Equity

In this chapter, I argue that when teachers learn to notice status and power at work in their classrooms, they are positioned to intervene constructively and to reshape patterns of inequitable access among students to meaningful learning. Further, I argue that the development of this type of teacher noticing can be purposefully supported, just as an experienced archeologist can support a novice to develop constructive ways to "see" dirt and skillful attorneys can support jurors to "see" police officers' use of force as professionally appropriate (Goodwin, 1994).

In the following sections, I look closely at work-embedded interactions to investigate the following questions. (1) How can we identify patterns in aspects of teacher noticing for equity, and in particular teacher noticing of the social organization of the classroom, in the context of teachers' professional conversations? (2) How can professional conversations purposefully support development of teachers' noticing of the social organization of the classroom? The close examination of work-embedded interactions gives us some access to all three subprocesses of noticing (selecting phenomena for attention, interpreting those phenomena, and responding accordingly), but primarily to the second, interpretation. The conversations examined in the research reported here take place after phenomena have been selected for attention and reveal interpretive work taking place (i.e., Wenger's negotiation of meaning) and, in some cases, also reveal potential responses as they are conceived.

Methods

This chapter's purposes are (1) to argue for the importance of teacher noticing of the social organization of the classroom and (2) to offer emergent methods for the study of the development over time of aspects of this type of teacher noticing, as

evident in work-embedded interactions. This section introduces methods to support the study of the development of teacher noticing of the social organization of the classroom. It begins by outlining the study within which the methods were developed and then it shares and exemplifies the methods.

The Study Context

This study examined the interactional work done by teachers with their instructional coaches in the context of an extensive, ongoing professional development project in Complex Instruction (CI) (Cohen, Lotan, Scarloss, & Arellano, 1999; Pescarmona, 2010) for secondary mathematics. CI is a pedagogical approach that focuses on providing equitable access to rigorous, student-centered learning experiences by preventing, identifying, and addressing status problems that stem from hierarchical and elitist notions of who can be "smart" in academic environments. CI takes as a foundational assumption the idea that all students are capable of participating in rigorous learning, and that teachers can support participation and learning for all students by intervening when status problems arise and by working to create classroom cultures in which "smartness" is understood in inclusive and expansive ways.

Two teachers who worked with one coach were selected for close analysis. These teachers worked at the same urban, continuation high school serving low-income students, and shared many of the same contextual supports and challenges. Video and audio records were collected of the interactions that took place between each teacher and the coach. Data shared here come from records of three debriefing conversations (after lesson observations) that took place between Mr. Shaw (a pseudonym) and his coach. (I am the coach involved in the conversations in this study. While a thorough discussion of affordances and limitations of participant-observation is outside the scope of this chapter, I mention a few issues briefly as they are relevant to the methods discussed in the following section.)

Analytic Methods

Conversations were recorded and then transcribed and organized into a two-column format in order to foreground the flow of conversation between the two participants (Ochs, 1979). Talk was segmented by breath, or meaning group (Chafe,

1994), with a new unit (referred to as "line") of talk beginning when (1) a new speaker began to speak or (2) a speaker paused and took a breath.[2]

Coding

Codes were developed to answer the following questions about noticing: (1) What do participants in the conversations attend to and interpret as successful and/or challenging in the lessons? (2) What do they name as goals or targets for the development of future instruction? In other words, what responses do they develop or envision?

Using open coding and grounded theory (Strauss & Corbin, 1994), the following categories of noticing emerged and were coded for across the data corpus: (1) Talk that related to noticing of *students' mathematical thinking and learning* (such as, "I was happy that they all seemed to get the main idea.") or to mathematical goals for instruction (such as, "What math do we want them to be learning?") was highlighted using purple (medium gray for this printing); (2) Talk that related to noticing of *the social organization of the classroom or of learning* (such as, "I saw really strong group work today.") was highlighted with pink (light gray for this printing); and (3) Talk that related to noticing of *student compliance*—whether and how students were "doing what they were supposed to do"—was highlighted with blue (black for this printing). Color-coding was critical in the creation of *code profiles*, which are discussed in the following section, and colors were chosen to provide visual contrast. (For this printing, coding is done in gray scale, with shades of gray chosen to support readers to see patterns discussed here. I ask the reader to imagine ways in which color makes patterns available to visual perception differently than can shades of gray.)

My participation as a coach in these conversations allowed me interpretive power in that I was able to check the results of my analyses against my assessments as a practitioner. It also forced me to seek out opportunities to ensure that the inferences I was making were warranted *in the data* and not unduly influenced by my impressions and biases. I did this by involving a research assistant who had not been present during the coaching conversations and had never met the teachers in the study. Together we combed carefully through the data to ensure that we were consistent in our interpretation of transcript and application of codes. Throughout my analysis and in this paper I have referred to myself in the coaching role as "the coach" as I have found that this choice helps to maintain an analyst's, rather than a practitioner's, perspective and voice.

[2]Traditionally, researchers who have looked for a low-inference method for segmenting talk have used turns or grammatical structures such as sentences or phrases. Chafe (1994) introduced the idea that *breath* or *meaning groups*, segments of talk that take place between breaths taken by a speaker are units of talk that carry meaning for participants in conversation.

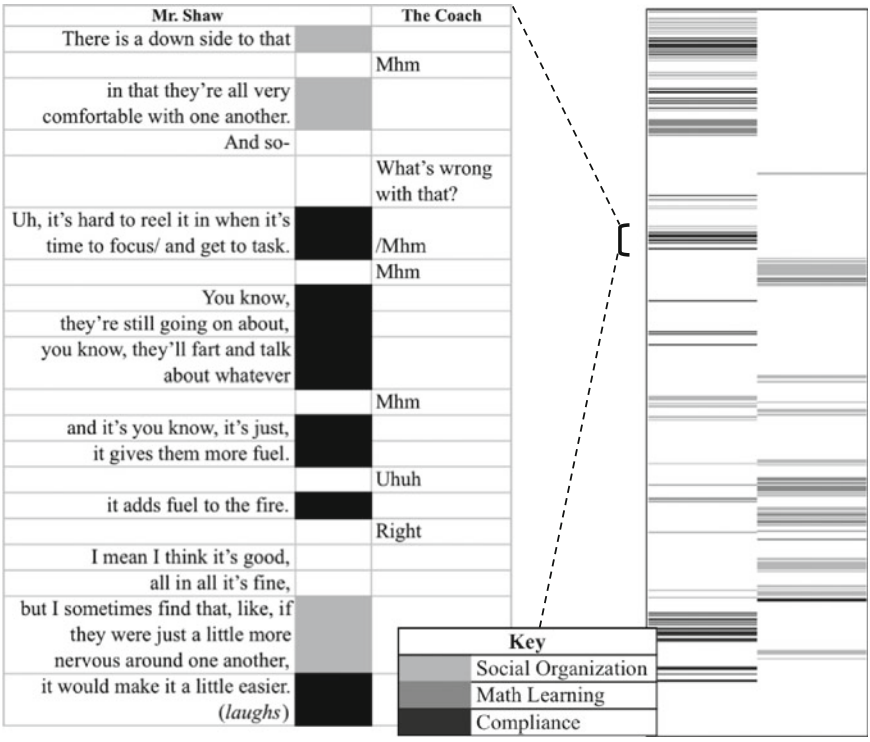

Figure 1. Transcript, Mr. Shaw 10/13/11, Lines 183–202.

Application of Codes to Transcript and Formation of Code Profiles of Conversations

Color codes were applied to breath-group segments of transcript using Microsoft Excel. Topic shifts were noted with horizontal lines. Text was then removed and the row height for each breath group was standardized. This process, adapted for gray scale and exemplified in Figure 1, yields representations called *code profiles*. Note that, because of the standardization of heights of each breath group in the code profile, the height of each strip of color is proportional to the number of breath groups receiving that code. (This is therefore independent of the width of the columns and the number of words within a breath group. For readability, this standardization is not possible in the transcript itself.)

Discussion of the Data Analysis

Code profiles are examined for patterns. The patterns that emerge are investigated using appropriate methods. For example, observations related to relative frequency of various kinds of noticing revealed in talk within or across participants can be investigated with counts and relevant calculations. Other observations suggest patterns of interaction that may prove instructive, and these observations can be investigated qualitatively, by looking closely at particular parts of the data. To understand the utility of code profiles, it is important to consider what they reveal that might otherwise remain hidden. While simple frequency counts can certainly be conducted without the support of these visual representations, such counts do not reveal ways in which coded talk unfolds between participants across time. Code profiles allow for the examination of such unfolding of coded talk and suggests to the analyst interactional phenomena that may be of particular import and worthy of further investigation. Both types of observations (those that rely on the code profiles and those that do not), along with investigations resulting from each, are exemplified in the following sections.

Illustrative Findings: The Case of Mr. Shaw

This section demonstrates the utility of the methods described above for the identification of the development of teacher noticing. The following two findings are discussed: First, examination of code profiles and subsequent numerical analysis revealed that Mr. Shaw's noticing of the social organization of the classroom developed over time, as evidence by his relevant talk in conversations with his coach. Second, code profiles revealed patterns of response by the coach to Mr. Shaw's talk about compliance that suggest successful efforts to support (or *apprentice*, as discussed in Goodwin (1994)) development of his noticing for equity. Qualitative analysis of relevant sections of these coaching conversations support this interpretation.

Finding 1: Code Profiles Reveal Development of Mr. Shaw's Noticing for Equity

Figure 2 shows code profiles for the three conversations between Mr. Shaw and the coach. In each code profile, Mr. Shaw's talk is represented on the left and the coach's talk on the right.

Examination reveals decreased presence of black (talk about compliance) in the left-hand columns across the three code profiles. This suggests that over the course of the three conversations, Mr. Shaw's talk revealed less noticing of compliance

Figure 2. Code profiles of conversations between Mr. Shaw and the Coach.

Table 1
Relative frequency of codes for Mr. Shaw's and Coach's noticing over time

	Mr. Shaw in conversation			Coach in conversation		
Noticing	1 (n = 106)	2 (n = 42)	3 (n = 35)	1 (n = 83)	2 (n = 129)	3 (n = 89)
Compliance	48% (51)	55% (23)	31% (11)	6% (5)	0	7% (6)
Social aspects	37% (39)	45% (19)	43% (15)	70% (58)	98% (127)	40% (36)
Math thinking	16% (16)	0	26% (9)	24% (20)	2% (2)	53% (47)

and more noticing of the social organization of the classroom and of mathematics learning.[3] This pattern is confirmed by simple comparison of relative frequencies of occurrences of each code. The left-hand section of Table 1 shows that the relative frequency of each type of Mr. Shaw's noticing changed across the three conversations in ways that confirm that pattern in the code profiles that was identified visually. (The coach's noticing, shown in the right-hand section of Table 1, is discussed in relation to Finding 2 in the following section.) In Table 1, n represents the total number of lines of talk that were coded for any type of noticing for each participant in the conversation.

While Mr. Shaw's noticing of compliance decreased over time, his general topics of concern stayed relatively stable. In particular, across the three conversations, he maintained concern for the extent to which his students were engaged with the mathematics of the lesson. However, the ways in which he talked about this concern shifted to include more concern for the ways in which the social organization of the classroom supports this engagement.

Finding 2: Code Profiles Reveal Ways in Which the Coach Supports Mr. Shaw's Development of Teacher Noticing

Examination of the code profiles (Figure 2) for all three conversations yields an interesting pattern of interaction between Mr. Shaw and the coach. Almost every time that Mr. Shaw's noticing talk is coded with blue (black here, signifying noticing of compliance), the next coded talk of the coach is pink (light gray here,

[3]One might also note that the *amount* of coded talk in each conversation is not consistent. In particular, there is much less coded talk in the third conversation. This happened because a larger part of the third conversation consisted of talk that did not give clear information related to these codes. Some examples of the types of talk that were not coded are when Mr. Shaw (1) reflected on the structure of the math task he used; (2) discussed individual students and his interpretations of their motivations as they related to his observations of their behaviors in the lesson; (3) talked about his need to plan future instruction and his struggles to meaningfully connect the mathematical content of his lessons to the other work that his students do; (4) brainstormed ideas for math activities for future lessons; and (5) reflected on those aspects of Complex Instruction that he found relatively easy compared with those that were more challenging for him.

signifying noticing of the social organization of the classroom). Closer examination reveals that of the 24 topic segments across all three conversations that contain any code on Mr. Shaw's side, his talk is coded with blue (black here signifying compliance) in 12 topic segments. In eight of these, the coach has some coded talk that follows and in every case but one that talk is coded pink (light gray here signifying social organization of the classroom). This suggests that the coach may be consistently re-interpreting issues that Mr. Shaw interprets in terms of compliance in terms of the social organization of the classroom.

This pattern suggests that the coach's talk was responsive to Mr. Shaw's. That is, her patterns of response appear to be purposeful and they shift as Mr. Shaw's talk

Table 2
Instances in which Mr. Shaw's compliance talk was followed by coded Coach talk

Conversation	Summary of Mr. Shaw's noticing of compliance	Summary of Coach's next talk
1	Students' high degree of comfort with one another is problematic as it pulls them off task.	This comfort level is actually a positive and can be built on in his search for better focus.
1	I might need "more structure" in my tasks to address my concern for the lack of focus and production from students.	"More structure" should be about structuring clear expectations for group work, and not structuring the mathematical thinking in which we hope students engage.
1	He talks about a particular student who is "not engaged".	She suggests solutions that relate to using an instructional strategy to give the student a clear role to play in his group's success.
2	He talks about a student who is "willing to work" in other arenas outside of math class, but not in math class.	She reframes this as the student having high status in other arenas and lower status in relationship to math.
2	He asks a question relating to allocating responsibility for getting work done among members of student groups.	She reframes the conversation to being about how to make it clear to students that they are responsible for making sense together of the content of the lesson.
2	He talks about a particular student who is "not engaged".	She suggests solutions that relate to making the student feel needed and promoting group interdependence.
3	He talks about a group that never really "connected" or "engaged" and wondered about whether the use of team roles might have helped with that.	She agrees that it is useful to think about team roles in relation to this group.
3	He talked about students being "willing to engage" but then reframed the same issue in terms of risk-taking and safety.	She agreed and did not reframe.

also shifts. In particular, the analysis suggests that the coach may have worked to support Mr. Shaw to shift away from noticing compliance and toward noticing both the social organization of the classroom and mathematics learning.

As is evident in the right-hand side of Table 1, the coach gave little attention across the three conversations to issues of compliance. Her focus on the social organization of the classroom and on mathematics learning varied somewhat, with the focus on the social organization of the classroom primary for the first two conversations and the focus on mathematics learning catching up in the last one.

To investigate patterns in the coach's responses to Mr. Shaw's noticing of compliance, all eight topics were examined in which (1) Mr. Shaw had some compliance talk and (2) there was some subsequent coded talk for the coach. These eight instances are summarized in Table 2.

To give the reader a sense for what this reframing sounded like, the transcript in Figure 3 below is taken from the conversation on October 13, 2011 (conversation 1), which is described in the third row of Table 2. Here Mr. Shaw talks about a particular student who he describes as "not engaging." The coach suggests solutions that might give the student a clear sense of his own role in the group's potential success.

Here we see that the coach's response to Mr. Shaw's compliance-focused concerns was to suggest what he might do and say that would encourage students to

Mr. Shaw:	um... And Malik [pseudonym] was just not... you know, I didn't want to make a big deal out of it. Cause I felt like... I would go by at some point and he was just kind of like singing to himself, or like not engaging, and um… you know maybe a little bit like you know the big idea, maybe weight loss and how they can present it, and then he'd just back off again. Cause he was supposed to be the recorder and Jacob was recording. And I said something at first. I was like, make sure we're doing our roles, without pointing anyone out. I was hoping they would self moderate. And… in the end they didn't. They just kinda like-they figured, whether they were conscious of it or not, that this person's not going to do their job, so I'm gonna step up
Coach:	We'd better do it if we want it to get done
Mr. Shaw:	Right. And luckily with that group the three other kids are all very selfless, in that they'll do whatever needs to get done, which sometimes is great and other times is not.
Coach:	I like that you didn't want to call him out. One thing you can do too is to call out recorder-reporters, like you can, like, "hey, everybody, I need you for a second" if you feel like it's important. Like, "recorder-reporters raise your hand" and then you can get all three of them, including him. "It's really important that you be-… I'm hearing lots of good ideas. I'm not sure they're getting written down really well. It's really important that you be writing things down really clearly and I'm going to check in with you in a few minutes," or something like that.

Figure 3. Condensed transcript 10/13/11, Lines 506–546.

take responsibility for the engagement of their team members, promoting interdependence.

This examination of this pattern of reframing across the conversations yields two observations that are useful in understanding Mr. Shaw's learning to notice. First, we see that the coach consistently responds to Mr. Shaw's compliance-related talk by focusing attention on issues related to the social organization of the classroom. Whether or not this was connected with an intentional effort by the coach to support the development of Mr. Shaw's noticing for equity, evidence suggests that this is what happened. Table 1 shows the proportion of talk that is coded for (1) compliance and (2) the social organization of the classroom AND math learning for both the coach and Mr. Shaw. It reveals that his focus on compliance versus other areas did approach hers over time.

Second, and similarly, we see that the last two topics summarized in Table 2, both of which took place during the third and final conversation in the study, show a markedly different pattern of interaction from the ones in previous conversations. In the second to last topic segment, Mr. Shaw talked about the extent to which the group "connected" or "engaged," which frames the issue at least partially in terms of group dynamics. He then considered whether the use of team roles, a strategy for managing group dynamics, may have made a difference for the group. The coach did not reframe his talk here, but affirmed his focus on considering group dynamics. Here, we see an example in which the teacher's interpretation of the issue in terms of group dynamics made space for him to consider constructive instructional responses.

In the eighth and final topic segment considered in Table 2, Mr. Shaw reframed *his own* talk about students being "willing to engage" in terms of issues of risk-taking and safety. Here the coach did not need to reinterpret the phenomena in terms of the social organization of the classroom, as he did so himself. The temporal order of these final two examples lends credence to the interpretation that Mr. Shaw has been learning to notice in productive ways across these conversations. In particular, he seems to be shifting away from noticing compliance and toward noticing the social organization of the classroom.

The code profiles also reveal clear evidence that the coach is crafting her responses to Mr. Shaw in relationship to his patterns of talk. In the third and final conversation in this study, the coach's emphasis on the social organization of the classroom was considerably reduced, and her emphasis on content learning increased significantly. Taken in light of the findings above, we might understand this in this way: as Mr. Shaw began to shift away from noticing compliance toward noticing the social organization of the classroom, the coach no longer needed to work so hard to support that noticing. She was therefore able to begin to suggest noticing of content learning. Limitations of data collection for this study prevent us from being able to follow the development of their conversations further to investigate whether Mr. Shaw considered the social organization of the classroom more consistently in subsequent conversations, or whether his noticing of content learning continued to develop.

It is important to note that there are limitations in our ability to generalize from Mr. Shaw's case to draw conclusions about what is likely to happen for other

teachers working with other coaches. The point of this chapter is not what happened for Mr. Shaw and the extent to which the same thing might happen for other teachers, but that findings in this case help to illustrate both the utility of the methods and potential for coaches to support the development of teacher noticing for equity.

Discussion

In his seminal 1994 paper, Goodwin names three practices by which participants in communities of practice build and contest *professional vision, "*which consists of socially organized ways of seeing and understanding events that are answerable to the distinctive interests of a particular social group" (p. 606): (1) coding, (2) highlighting, and (3) producing and articulating material representations. He goes on to explain that "…the ability to see a meaningful event is not a transparent, psychological process but instead a socially situated activity accomplished through the deployment of a range of historically constituted discursive practices" (p. 606). He shows ways in which experienced professionals (an archeologist and a legal defense team) "train" the vision of novices to their fields. A new archeologist comes to see relevant color and texture distinctions that transform what had been a pile of dirt into a rich source of archeological evidence and a jury comes to see police actions that had been unprovoked violence against a defenseless man as sensible responses to the drug-fueled actions of a dangerous man who was, in fact, in control of the situation. Through these examples, Goodwin demonstrates that professional vision is both (1) deeply consequential for the actions that are available and sensible to people engaged in practice and (2) an active, socially negotiated, and situated process (or set of processes) into which people can be apprenticed.

This chapter suggests that teacher noticing for equity, and in particular teacher noticing of the social organization of classrooms is a particular type of professional vision that is consequential for teaching practice and consists of a set of active processes into which teachers can be apprenticed. I stipulate that patterns of inequity in classrooms have persisted in part because many people, including teachers, do not yet "see" them. The data presented here supports the extension of Goodwin's ideas to suggest that this type of teacher noticing can be purposefully supported by expert practitioners and that in-service teachers can be apprenticed into noticing for equity. The data presented here suggest that the coach in this study had a professional vision of equity such that she noticed the social organization of the classroom. The teacher did not yet have this vision. However, through

interactions in which the coach prompted Mr. Shaw to attend to his classroom in a particular way, he began to engage in this type of noticing without prompting.

As teacher educators work to support teachers to create equitable classrooms, it will be important to consider and design opportunities to support teachers' noticing of equity and inequity as they play out in the social environment of the classroom. Data here suggest that one way to do this is through the support of coaches or other practitioners who are well versed in noticing for equity and who work purposefully to support teachers in this development.

These ideas are offered with the hope that other scholars will weigh in about other aspects of teacher noticing that may be important for equity and about how those aspects of noticing might be productively studied. For example, some of the work of Gutiérrez (2002, 2007, 2013) may suggest that there are important aspects of teacher noticing for equity related to the cultural and political contexts of the schools and communities within which teaching and learning take place. Teachers may need to develop particular kinds of noticing to be prepared to act as effective change-makers on behalf of their students.

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