# Extending Equitable Practices in Teacher Noticing: Commentary

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**Abstract** In recent years, equitable pedagogy and professional noticing have intersected in mathematics education research (Erickson, 2011; Hand, 2012; Wager, 2014). Teachers can make assumptions about students from non-dominant races, cultures, languages, and low socioeconomic status that are deficit-oriented (DiME, 2007). Thus, it is critical for equity to be central to professional noticing to provide all students with high quality learning opportunities. Hand (2012) emphasized the significance of teacher disposition in equitable instruction and developed a model consisting of three practice features to include: promoting dialogic space in classroom interactions, blurring distinctions between mathematics and cultural activity, and reframing the system of mathematics education. However, questions continue to be raised about what noticing for equity looks like in diverse classroom contexts. While there was agreement in this section on professional noticing consisting of the three interrelated components of attending, interpreting, and deciding (Jacobs, Lamb, and Philipp, 2010), the authors provided varying perspectives on how to embed equity. In this commentary, the following are highlighted: (a) equity frameworks, (b) teacher disposition and identity, and (c) classroom-based practices. Then, final thoughts are presented to connect topics in these chapters with further questions and considerations for the field.

**Keywords** Equity · Teacher disposition · Status · Positioning · Mathematics identity

In mathematics education research, equitable pedagogy and teacher noticing have flourished over the last two decades (D'Ambrosio et al., 2013; DiME, 2007; Gates & Jorgensen, 2009; Gutierrez, 2002; Sherin, Jacobs, & Philipp, 2011; Stahnke, Schueler, & Roesken-Winter, 2016; Strutchens, et al., 2012). Yet it is only in recent years that equitable pedagogy and teacher noticing have intersected in mathematics education research (Erickson, 2011; Hand, 2012; Wager, 2014).

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Erickson (2011, p. 28) referred to teachers' "pedagogical commitments" as "basic ontological assumptions, both tacit and explicit, concerning manifold aspects of teaching and learning activities," to illustrate how such assumptions inform equitable (and non-equitable) classroom practices. For example, teachers' views on learners' abilities ("low" or "high") and/or effort ("works hard") can influence their own expectations, the support they are willing to provide, and the tasks they select. Teachers often have assumptions about students from non-dominant races, cultures, languages, and low socioeconomic status that are deficit-oriented (DiME, 2007). Thus, it is critical for equity to be central to teacher noticing if the goal is to provide all students with meaningful learning opportunities and experiences. Hand (2012) emphasized the significance of teacher disposition in equitable instruction and developed a model consisting of three practice features to include promoting dialogic space in classroom interactions, blurring distinctions between mathematics and cultural activity, and reframing the system of mathematics education. This model offered tangible ideas of equitable teaching, but questions continue to be raised about what noticing for equity looks like in diverse classroom contexts. While there is agreement in this section on professional noticing consisting of the three interrelated components of attending, interpreting, and deciding (Jacobs, Lamb, and Philipp, 2010), the authors provided varying perspectives on how to embed equity. In this commentary, I highlight (a) equity frameworks, (b) teacher disposition and identity, and (c) classroom-based practices. Then, I close with final thoughts to connect topics in these chapters with further questions and considerations for the field.

## Equity Frames

It is well established that equity in mathematics education is complex and multi-layered. Several scholars have recognized that the term equity consists of a range of concepts to include access, teaching for social justice, culturally relevant pedagogy, funds of knowledge, and status and participation (DiME, 2007; Jong & Jackson, 2016; Wager & Stinson, 2012). Some of these concepts have also been discussed in terms of distinct levels where *access* is moderate and *challenging structural inequities* is radical (Gates & Jorgensen, 2009). Thus, it is important to note the equity frames that are used within these chapters. Kalinec-Craig and Baldinger centered their work on status as it connects to student participation and positioning. Specifically, Kalinec-Craig drew on the sociological theory of expectation states and complex instruction to explain status. Similarly, Baldinger discussed status using complex instruction, but placed an emphasis on the social organization of the classroom and power dynamics. While van Es, Hand, and Mercado did not explicitly use a status framework, they noted the role expectations play in what teachers attend to during instruction and student participation; furthermore, a theme from their findings showed that the participating "teachers all attend to issues of *status and positioning*." (p. 266) Informed by Erickson's (2011)

*pedagogical commitments* and building on Hand's (2012) model of equitable instruction, van Es et al. focused on teacher dispositions as they relate to equitable mathematics teaching practices.

The aforementioned equity frames, undoubtedly, informed the findings and implications. For example, Kalinec-Craig found that preservice teachers noticed characteristics of status and issues of participation within their field placements and classroom videos viewed in their mathematics methods course. A key finding emphasized was that "the process of equalizing students' status is not a process by which raising the status of one child means the teacher must lower the status of another" (p. 226). In Baldinger's chapter, she showed how a coach can support a teacher's noticing for equity and suggested the use of code profiles as a method to analyze discussions. The code profile of the teacher in this study implied that conversations with the coach promoted a shift from noticing *compliance* toward the *social organization of the classroom* and *mathematics learning*. The findings in van Es, Hand, and Mercado's chapter revealed clear relationships between teachers who noticed for equity and how it informed their instructional decisions. Along with status and positioning, teachers "attended to individual student histories" and "noticed the energy and flow of the students and the class," which indicated a "multi-layered nature of noticing for equity" (p. 266).

## Teacher Identity and Disposition

Whether explicit or implicit, *identity* was a common factor in the studies in this section. Within these chapters, the spectrum of teacher development is represented, including preservice elementary teachers, a secondary mathematics teacher and coach, and expert secondary mathematics teachers. The authors all note that an equitable teacher disposition is central to promoting equity by having high expectations, valuing students' cultural knowledge, or connecting mathematics content with students' interests. Similarly, teachers' identity and their awareness of student identity shape their instructional decisions (Hand, 2012; Jong, 2016). In her literature review, Baldinger discussed how the learning opportunities teachers provide shape the development of students' positive identities as creators of mathematical ideas and capable learners. Kalinec-Craig's study focused on how Mexican-American immigrant preservice elementary teachers noticed and addressed issues of status and participation in their own prior experiences, courses, and field placements. They were able to identify with students in their field placements who were primarily Spanish speakers and emerging bilinguals, yet still able to attend to students who were different than themselves. This perspective is one that is rarely captured, because the majority of teachers in the U.S. are white while the student population continues to increase in racial and ethnic minorities (Museus, Palmer, Davis, & Maramba, 2011). Similarly, students of color face stereotype threat and lowered teacher expectations, and often attend schools that have more unqualified teachers and fewer resources (Museus, et al., 2011; Stinson, 2009).

In response to such inequities, van Es, Hand, and Mercado aimed to understand how secondary mathematics teachers, "come to notice the activity of their mathematics classrooms in ways that enable them to interrupt these deficit perspectives and processes in support of their learners" (p. 252). While three of the four teachers in this study were white, they were selected based on demanding criteria that clearly demonstrated their commitment to and success with promoting equity. Their results confirmed that the teachers had an "equity lens" that informed how they attended to students, interpreted experiences in the mathematics classroom, and made instructional decisions. As Hand (2012) explains, "dispositions of mathematics teachers are critically important because they underlie distinctions teachers are likely to make in moment-to-moment classroom activity" (p. 234). For example, a teacher may interpret a student's seeming disinterest as one who lacks motivation or aptitude rather than one who needs to connect the content with his/her cultural background or interest.

## Classroom-Based Practices

At the heart of noticing for equity is making instructional decisions that will positively influence students' achievement, experience, and identity. It was promising that several findings and implications in these chapters included pedagogical moves that promote equity, which provide more clarity on what noticing for equity looks like in the classroom. van Es, Hand, and Mercado found five teacher practices that promoted equity: leaving students to grapple with mathematical ideas, making norms explicit for doing mathematics, supporting students in developing mathematical identities, connecting with students to honor individual strengths, and making systems of schooling explicit. They elaborate on these practices with rich descriptions and supportive examples. Baldinger argued that teachers can be more attuned to status issues if they notice the social organization aspects of the classroom (e.g., group dynamics, who is participating in the discussions) as opposed to compliance (e.g., who is following instructions). By doing so, the goal is to have a greater focus on engaging students with the mathematics of the lesson. This aligns with an example where Schoenfeld (2011, p. 229) noted, "The teachers were so focused on issues of order and discipline that they failed to notice that the students were amazingly competent!" In Kalinec-Craig's context, preservice teachers made the following instructional decisions to promote equity in the classroom: using students' native language, providing opportunities for all students to communicate their thinking, and encouraging the participation of individuals who were perceived to have a lower status.

While all the equitable practices presented in this section were deemed valuable, there is variation in the skills and knowledge required for implementation of these practices that may be aligned to a developmental progression, to a certain extent. For example, preservice and novice teachers are more likely to take up practices such as encouraging participation of individuals as opposed to making systems of schooling explicit, which might be achieved with more experience and a more

complex level of noticing for equity. My point here is to say that context and teacher development are two critical factors for mathematics educators and researchers to take into consideration. While both factors, context and teacher development, have been discussed in teacher noticing research, there has been more attention on teacher development in terms of what is required to notice at various levels (Schoenfeld, 2011; van Es, 2011). So it may very well be the case that noticing for equity contributes to the field by paying particular consideration to the contexts of classrooms and schools, as these authors have shown. In addition, deliberate attention extends beyond students' mathematical thinking to include their positioning, whether they are making personal connections to the content, and how they are interacting with their peers and the tasks. As van Es et al. note, there is a distinction regarding equitable teaching practices that include "issues of status, culture and power in the mathematics classroom" that surpasses "just good teaching" (p. 268). Correspondingly, Cochran-Smith et al. (2009) make a case for teaching for social justice by directly addressing critiques of it as *just* or *simply* "good teaching," because it is viewed as an "ambiguous concept that is widespread but undertheorized" (p. 347). To make such a case, evidence was provided of preservice teachers who had both a thoughtful understanding of teaching for social justice and classroom practices that reflected the following four characteristics: focusing on all students' learning, building relationship with students and respecting their families and cultures, being an activist by advocating for students and engaging in community work, and recognizing inequities related to race, class, or resources. In this section, additional characteristics of equitable pedagogy were presented to strengthen the case for noticing for equity in mathematics classrooms.

## Final Thoughts

There are two common features I found in reviewing these chapters that warrant further discussion as equity and teacher noticing intersect. The first is that the *contexts* were all in low-income schools and mathematics classrooms with students who are racially, culturally, and/or linguistically diverse. Second, the *research methods* were qualitative in nature and drew primarily on interview and observational data.

The authors in this section all recognize that equitable teaching is essential for students who are racially and culturally diverse, because they can experience school in ways that are quite distinct from students and teachers in dominant groups. There was also consensus for the need to notice equitably in low-income schools, because there might be fewer resources and structures that limit learning opportunities (e.g., tracking, larger class size). While I completely agree with the authors on these accounts, I could not help but wonder: *What does noticing for equity look like in a suburban school with mostly white students?* There are some equitable teaching practices, such as supporting students in developing positive mathematics identities, which can certainly be beneficial to all students; however, I suspect that there are

teaching practices that specifically apply to students in predominantly white schools where an awareness of privilege and inequities are integrated into the mathematics curriculum. This might also look different depending on students' socioeconomic status or gender. I do not have any clear answers to this question, but think it is worth more consideration. Another pedagogical question related to the mathematics classroom context I pose is *Can equitable teaching exist in classrooms where reformed-based curricula are not used?* I raise this question because van Es, Hand, and Mercado required "skilled use of reform-based mathematics curriculum" as a criterion to select "exceptional equitable teachers" (p. 256). It is certainly challenging for me to envision equitable mathematics practices in a teacher-centered classroom where the focus is on rote learning and students are not given an opportunity to discuss mathematical ideas. The case has been made that reform-based approaches promote equity (Boaler, 2002; Secada & Berman, 1999), but whether they are inherent to equitable teaching is a topic that can, and should, be further explored.

In this section, the qualitative research methods were appropriate to the questions and aims in the chapters. There was variation in the extent to which the coding and analytical methods were detailed, but some common themes were apparent. Baldinger suggested the use of code profiles to examine potential changes in noticing; however, the three broad codes might not be specific enough to disentangle the nuances that exist in equitable teaching. A methodological question I have is *Can an instrument be developed to measure noticing for equity in mathematics?* While it is possible (and there might be one that exists), agreeing upon a clear purpose and common characteristics to measure would not be a simple process. For example, measuring whether teachers demonstrate equitable dispositions versus practices would look quite different. Dispositions can more appropriately be measured by a survey or open-ended interview questions in comparison to practices where an observation protocol would be valuable. An instrument that applies to a variety of contexts (e.g., elementary vs. secondary, urban vs. rural) and stages in teacher development (novice to expert) might be so generic that it is of limited value *or* might be so extensive that it becomes taxing to use. I raise these methodological and measurement questions for scholars to consider ways to further validate the construct of noticing for equity. Research questions about equity and teacher noticing that are of interest to scholars in the field may not lend themselves to the positivist paradigm. However, it might be fruitful for noticing for equity research to take a more critical theory approach by exploring participatory design research with the aim of developing more socially just systems (cf. Gutiérrez, Engeström, & Sannino, 2016).

As research on noticing for equity continues to grow, scholars need to take careful consideration of contextual factors and develop purposeful research designs. In addition, selecting equity frames that apply to classroom practices, and attending to teachers' disposition and identity are critically important, as the authors in this section have demonstrated.

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