


Chapter 7

Making Equity Considerations Explicit With Mathematics Discussion Approximations: Reflecting on Attempts and Challenges

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ABSTRACT

Supporting preservice teachers to learn to facilitate math discussions in ways that are both mathematically productive and equitable is a goal for many mathematics teacher educators (MTEs). In pursuit of this goal, MTEs may utilize approximations of practice, such as rehearsals of mathematics discussions or enactments in school settings. However, little is known about how MTEs integrate attention to equity considerations into work with such approximations. This chapter calls upon MTEs using approximations of practice to make their attention to issues of equity explicit and to engage in cycles of self-examination to hold themselves accountable for following through on commitments to equity. As an example, a self-study of one MTE's practice in an elementary mathematics methods course is shared. Findings identify challenges that the MTE encountered with maintaining an explicit equity focus with respect to mathematics discussion approximations. Implications for equity-oriented MTEs are discussed.

INTRODUCTION

Facilitating meaningful mathematics discourse is one of eight teaching practices identified by the National Council of Teachers of Mathematics (NCTM) as being critical for effective and equitable math instruction (NCTM, 2014). Given this, supporting preservice teachers (PSTs) to learn to lead mathematics discussions has become a central goal for many mathematics teacher educators (MTEs) (e.g., Association of Mathematics Teacher Educators, 2017; Ghouseini & Herbst, 2016; Shaughnessy et al., 2019). In service of this goal, MTEs may have PSTs engage in approximations of practice, or “opportunities for novices to engage in practices that are more or less proximal to the practices of a profession” (Grossman et al., 2009, p. 2058). Prior studies have shown that approximations of practice, such as rehearsals of

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mathematics discussions and implementation of instructional activities in school settings, can support PSTs to develop their skills with complex practices, such as organizing a mathematical discussion (Tyminski et al., 2014), eliciting and responding to students' mathematical thinking (Lampert et al., 2013), and orchestrating interaction within a mathematics discussion (Shaughnessy et al., 2019).

Although meaningful mathematics discourse is frequently framed as being integral to equitable mathematics education, studies focused on approximations of mathematics discussions rarely go into detail about *how* issues of equity are addressed. Instead, it is common to frame equitable mathematics instruction as an overarching goal that approximations of practice help to pursue (e.g., Averill et al., 2016; Campbell & Elliott, 2015; Kazemi et al., 2016; Lampert et al., 2013; Singer-Gabella et al., 2016). Some exceptions to this pattern, such as studies explicitly framed from equity-oriented perspectives, raise the concern that approximations of mathematics discussions can cause harm and reinforce inequitable ideas and practices, even with MTE intentions to promote equitable mathematics teaching. For instance, Byun and colleagues (2023) found that some PSTs, after engaging in an approximation of practice and analyzing video of their enactments, attributed marginalizing patterns of participation in mathematics discourse to minoritized students in ways that shifted responsibility for addressing the inequity *away* from the PST. In a similar vein, Bondurant and Reinholz (2023) found that racist and sexist mathematical stereotypes can be invoked and perpetuated through student avatars in a mixed-reality simulation. In addition to these empirical concerns, critical scholars in mathematics education argue that mainstream attention to equity, with the implied vision of "mathematics for all" (Martin, 2003), often overlooks critical dimensions of equity, such as engaging with students' multiple identities and actively disrupting deficit narratives about children, families, and communities of color (Gutiérrez, 2009; Maldonado Rodríguez et al., 2022).

With these risks and critiques in mind, I argue that if MTEs are truly committed to the pursuit of equity, then we should push the field forward by being more explicit about *how* and *when* issues of equity enter into our work with approximations of practice. In addition, given that *intentions* to pursue equity-oriented goals do not guarantee equity-oriented *implementation* or equitable outcomes, I call for MTEs to hold ourselves accountable by periodically and systematically reflecting on how we have attended to issues of equity in our own practice, and making that reflection public. In this chapter, I demonstrate what this process could entail by reporting on a self-study (LaBoskey, 2004; Lassonde et al., 2009; Tidwell & Jónsdóttir, 2020). This study focuses on my attention to equity with mathematics discussion approximations in an elementary mathematics methods course. I use course artifacts from a recent semester and an interpretive qualitative approach (Hesse-Biber & Leavy, 2011) to explore the following research questions:

- 1) In navigating work with mathematics discussion approximations, when and how have I held onto an explicit equity focus?
- 2) When and how have equity considerations become implicit or backgrounded, and why does that seem to have happened?

The course in question involves two major approximations of practice: (1) in-class rehearsals in which PSTs act as students for their peers and (2) mathematics discussion enactments that take place either with children in field placement classrooms or a mixed-reality virtual simulated environment, depending on the nature of PSTs' field placements. My intentions as an MTE have been to foreground a vision of equitable mathematics instruction that includes attention to students' multiple identities and purposeful efforts to disrupt and challenge existing inequitable patterns in mathematics education, such

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