ADVANCING UNDERSTANDING OF EQUITY WITH CASE STUDY DILEMMAS: LESSONS FROM PRESERVICE TEACHERS

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Recent reform in teacher education looks to understand and support equity initiatives in mathematics education (AMTE, 2017; NCTM, 2000, 2014). These efforts encourage preservice teachers (PTs) to engage in authentic classroom situations that explore equity-based practices by connecting theory and practice (Chao, Murray, & Gutiérrez, 2014; Ching, 2014). PTs can use case studies to reflect on their own teaching experiences and position themselves in scenarios in which they may not be familiar (Redman & Redman, 2007). This study reports on PTs in mathematics methods courses participating in a series of case study dilemmas designed by the researchers to elicit conversations of equity in mathematics education. We examined the following research question: How do PTs engage with case study dilemmas in mathematics methods courses to advance their understanding of equity in teaching mathematics?

We conducted a qualitative case study design that used multiple data sources and referenced Gutiérrez's (2007) equity framework that describes equity as a complex notion in terms of access, achievement, identity, and power. Participants included 43 PTs enrolled in three mathematics methods courses across two universities in the United States. Both courses were structured to introduce equity on the first day of class and address equity-based teaching practices throughout the semester with course readings, activities, and discussions. In planning for the methods courses, we created two case study dilemmas to facilitate equity discussions focused on identifying and challenging assumptions, biases, and stereotypes as well as exploring equity through a lens of fairness. The first dilemma prompted the PTs to examine equity in terms of access and identity by exploring a teacher's response to receiving a new student in her classroom that did not look like her or the rest of her students. The second dilemma, focused on access and achievement, analyzed a teacher's intent to have equitable expectations in the context of a zero-tolerance homework policy. Pre- and post-surveys were collected from the PTs to gain insight into their changed perspectives on equity. The surveys and transcripts of the recorded discussions were coded using in vivo and descriptive coding techniques (Saldaña, 2016).

Participation in the case study dilemmas encouraged the PTs to reflect on their understanding of equity and develop their pedagogical knowledge of equity-based teaching practices. The first dilemma prompted the PTs to examine a teacher's assumptions toward a student. The PTs identified how the assumptions invited marginality and reaffirmed mathematics identity. They also discussed how the assumptions impacted the student's opportunity to learn ambitious mathematics and strategized ways teachers can be proactive in learning students' needs and cultural backgrounds. In the second dilemma, PTs debated what it means to have equitable expectations and how teachers can leverage multiple mathematical competencies using a variety of resources and assessments. Overall, the PTs commented on how they benefited from using the case study dilemmas to make them more aware of their biases and better understand what equity looks like in the mathematics classroom. Recommendations will be shared for using similar instructional activities to equip PTs with the knowledge and skills needed to embed equity-based practices in their professional practice.

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