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APPROXIMATIONS OF PRACTICE AND EQUITY: SURVEYING THE SPACES

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After three years of meeting as a working group at PME-NA, we will be editing a book on how several models of approximations of practice support or hinder the creation of equitable mathematics learning and thinking spaces. Participants and working group leaders will serve as critical friends as we use a fishbowl format and small groups to provide spaces for refinement and challenge. Participants will leave with a network of thought partners and a draft chapter. At the end of the working group, we will identify overarching themes about affordances and limitations of several models of digital and non-digital forms of approximations of practices in order to develop preservice teachers (PSTs') equitable teaching practices.

Keywords: Equity, Inclusion, and Diversity, Instructional Activities and Practices, Preservice Teacher Education

Background

In the last two decades, mathematics teacher education programs have emphasized designing and implementing practice-based experiences (Ball & Cohen, 1999; Janssen et al., 2015; Zeichner, 2012). Approximations of practice, a type of practice-based experience, “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); however, there is a risk of oversimplifying the social and cultural aspects of classrooms (Grossman et al., 2009; Zeichner, 2012). Thus, mathematics teacher educators (MTEs) have begun foregrounding their approximation research on several aspects of equity, such as how students’ identities might influence their thinking and learning (Shah, 2017), what counts as knowledge, and who generates it (Gutiérrez, 2018).

Equity-focused approximations have the potential to prepare PSTs to use equitable practices in their planning, instruction, and assessment when working with diverse students, including those from marginalized populations. As we mentioned earlier, there is limited research on how different digital and non-digital forms of approximations provide PSTs with opportunities to develop equitable teaching practices. Self’s & Stengel’s (2020) SHIFT project and Buttimer and colleagues’ (2022) MIT Teaching Systems Lab projects are two examples of equity-focused digital simulations projects, but more attention is needed to fully understand the potential work that could occur in this space.

We anticipate MTEs interested in foregrounding equity in their approximations work will be eager to participate in our working group. We plan to dedicate our time together at PME-NA to writing, providing feedback, and revising chapters for an edited book. Participants will serve as “critical friends” (Schuck et al., 2008) who “[act as] sounding board, offer opportunities for reflection, [will be] co-learners, and will ask challenging questions” (Russell & Schunk, 2004, p.

2013). We envision this working group as a space, where MTEs challenge each other to reflect on their current work and collaborate to develop approximations that foreground equity.

Focus of the Work

This working group is an extension of a group that began in 2019. During the 2022 conference our group engaged sixteen participants. Collectively, the leadership team and participants decided to produce an edited book (Wilkerson et al., 2023). We are working with IGI publishers on an edited book. We will send a call for chapter proposals out in May 2023. Chapter proposals will be due December 2023 and authors will be notified in February 2024. Our meeting times during PME-NA will provide a collaborative space for authors to shape their work. We plan to solicit chapter proposals on professional listservs, Twitter, in the Association of Mathematics Teacher Educators (AMTE) *Connections* newsletter, and AMTE Simulations Community Circle. Our PME-NA sessions will focus on these key questions that stem from the organization of the book (outlined more in depth in our 2022 Final Report):

- 1) What are several models of approximations of practice currently used in the field?
- 2) What are unique affordances and limitations of those approximations to foreground equity in teacher preparation?
- 3) How design elements of approximations could be altered in order to optimize PSTs' opportunities to develop equitable teaching practices?

Organization and Plan for Active Engagement

The working group sessions will be structured parallel to the edited book's three sections. The first session will highlight the breadth of work that characterizes PSTs approximations. The second and third sessions will push beyond the current approximations work to forefront equity. Specifically, we will provide space for authors to collaborate and critically analyze how equity can be foregrounded in their work. Time will be spent writing, providing feedback, and revising.

Session 1: Approximations of practice as spaces to forefront equity

During Session 1 the leadership team will provide a brief overview of current research in approximations and our group's plans to publish an edited book. We will engage participants in an activity to place their work within a conceptual map of the space of approximations. We will form Critical Friend Groups (CFGs) based on participants' interests. CFGs will meet to share their work and how they are currently attending to equity. At the conclusion of the first session, participants will be given a CFG document to focus their work during Session 2.

Session 2: Critical conversations to expand our spaces

Prior to PMENA, we will select one approximation article and during Session 2 the leadership team will use this article to model the process of engaging in critical conversations to foreground equity. We will use a modified CFG protocol (Braaten, Grandados & Bradford, 2022) to facilitate critical conversations on how the study could foreground equity. We will set norms and allow time for multiple points of view to be shared in a productive and transformative way. This activity models the process authors of chapters in the second section will use.

Session 3: Future spaces within approximations of practice

During Session 3 CFGs will engage in provocative and aspirational conversations regarding our visions for the future. Everyone from graduate students to veteran scholars will be provided space and time to share their perspectives and goals. Editors will also meet one on one with participants who would like feedback on their chapter proposals.

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