

## TA Coaches in the Mathematical Sciences: Exploring Their Roles and Their Perceptions

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In recent years, the focus on practice-based, inclusive pedagogy in mathematical sciences has increased as research demonstrated that active learning pedagogy in STEM classrooms narrows achievement gaps (Freeman et al., 2014; Theobald et al., 2020). In response, instruction-related training programs for graduate teaching assistants (GTAs) now emphasize classroom pedagogical techniques that graduate students themselves may not have experienced during their own undergraduate mathematical training. Peer mentoring programs support new GTAs as they move from learning about pedagogy in their teaching training seminar to their first undergraduate mathematics classroom experiences. These peer-relationships, designed as weekly or biweekly interactions between mentors and mentees, develop across the span of an academic semester or year (Lorenzetti et al., 2019). While the mentor-mentee conversations facilitate support and resource sharing (Browne-Ferrigno & Muth, 2012) and provide mentees with constructive criticism after classroom observations (Yee & Rogers, 2017), mentors are not necessarily tasked with being instructional coaches to assist with entire lesson plan development and implementation, like K-12 instructional coaches. Similar to the paired teaching approach to help new faculty adopt active learning strategies (Strubbe et al., 2019), a peer instructional TA coach (hereafter “TA Coach”) is a unique element of a graduate peer mentoring program.

This poster focuses on the experiences of TA Coaches in a comprehensive graduate teaching assistant training program in mathematical sciences that was designed and refined at one institution and is being replicated at two peer institutions. During program development, TA coaches were tasked with working with GTAs teaching recitation sections of college algebra and calculus I to facilitate active learning pedagogy and were asked to free-form journal about their experience. At the two institutions replicating the program, the duties changed to support the structure and needs of each department. Recent TA coaches at the three institutions participated in interviews about their experiences. This poster summarizes the roles of the TA Coaches across the three universities and explores their perceptions of the unique benefits that the TA coach role provides to the GTAs they assist and their own instructional experiences.

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