

Tracking Graduate Teaching Assistants' Responses through Sustained Professional Development

V. Rani Satyam
Virginia Commonwealth
University

Franklin Yu
Virginia Commonwealth
University

Rebecca Segal
Virginia Commonwealth
University

Mary E. Pilgrim
San Diego State University

Mary Beisiegel
Oregon State University

ELITE PD Research Group
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There is a strong need to support mathematics graduate teaching assistants (MGTAs) in leveraging active learning techniques in ways that are inclusive and equitable (Beisiegel et al., 2019). Mathematics graduate students make up a large section of the workforce involved in teaching introductory mathematics courses at Ph.D. granting universities (Selinski & Milbourne, 2015). Professional development geared specifically towards MGTAs would provide support and guidance (Kuechle, 2022). In this poster we examine: How do MGTAs' responses about teaching with active learning shift through a year of sustained professional development? We track three MGTAs' responses over time and describe their individual trajectories.

This is part of a large multi-site project focused on designing and implementing a multi-year professional development program for MGTAs. We report on data from one of the three sites, a public Southeastern university. Participants are graduate students who were teaching assistants for mathematics courses and took part in a teaching seminar in the fall and then an Introduction to Active Learning course in spring. Each of these professional development structures involved readings and activities in and out of class. These included reading Su (2016)'s *The Secret Mathematical Menu* and sessions on facilitating group work, examining the meaning of equity, considering majority versus marginalized identities, and reflecting on problematic assumptions in teaching. Data consisted of exit tickets and reflections to the aforementioned activities and the overall course from graduate students who consented to the research.

Preliminary analysis of MGTAs' discourse reveals (1) increased sophistication in articulating their thoughts regarding teaching, (2) centering of students, and (3) intellectual need for learning more about issues of diversity, equity, and inclusion in teaching. For example, one participant wrote, "The course has given me more specific examples of what equity and inclusion look like specifically in classroom settings and ideas on how to implement them." Another participant wrote in her exit ticket at the end of the course, "I have learned new ways to be more inclusive" and included what she would still like to learn: "More about changing our own biases." This last finding corroborates MGTAs' readiness for the next phase of the professional development and research: to design and implement a more advanced course around issues of equity, where they can gain deeper awareness and tools to be prepared for teaching. In the poster, we will provide quotes and trajectories for three MGTAs who consistently shared, for how their thoughts shifted through the various professional development activities.

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References

- Beisiegel, M., Gibbons, C., & Rist, A. (2019). Teacher interrupted: How mathematics graduate teaching assistants (don't) learn about teaching. In M. Graven, H. Venkat, A. Essien & P. Vale (Eds.), *Proceedings of the 43rd Conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 97-104). Pretoria, South Africa: PME.
- Kuechle, V. A. B. (2022). A Multicase Study of Three Graduate Teaching Assistants Participating in the MDISC Teaching Professional Development. Michigan State University.
- Selinski, N. E., & Milbourne, H. (2015). The institutional context. In D. Bressoud, V. Mesa, & C. Rasmussen (Eds.), *Insights and recommendations from the MAA national study of College Calculus* (pp. 31-44). Washington, DC: MAA Press.
- Su, F. E. (2016). The secret mathematical menu. *MAA FOCUS*, p. 28–30.