

Towards Better Mathematics Teaching Assistant Preparation in Graduate Programs

Aida Alibek
University of Illinois at Chicago

This work focuses on the preparation of graduate Teaching Assistant in the mathematics department of a large midwestern R1 university. We explore the author's experience with three different versions of the course in three varying capacities: as a student, a mathematics education researcher and a co-facilitator. As we delve into the author's reflections on the evolution of the teaching preparation within this timeframe, we highlight some issues with the course structure and execution. This leads to the development of another, more realistic version of the preparation course.

Keywords: Teaching Assistants, Teaching Assistant Preparation, Professional Development

Teaching Assistant (TA) preparation is a relevant topic for graduate programs, including those housed in mathematics departments (Shannon, Twale, & Moore, 1998; Speer, Gutmann, & Murphy, 2005). However, not all schools offer regular, consistent teaching training that help first-time TAs adjust to their new job (McGivney-Burelle, DeFranco, Vinsonhaler, & Santucci, 2001). In this poster we will look into such a preparation program at a large midwestern R1 university and its evolution, as experienced by the author. The math TA preparation at this institution is presented as a semester-long course offered each fall, and mandatory for all incoming first-year graduate students, as well as new math TAs hired from outside the mathematics department.

In this study we encounter reflections on the three versions of the TA preparation course. First is the reflection of the author on their experience in the Version 1 course as a first-year math graduate student in the department. Version 2 is a course model based on the author's research into the extant literature on graduate math TA training. Version 3 is the current Fall 2018 iteration of the TA preparation course, which is co-facilitated by the author of this paper in the role of one of the Teaching Assistant Coordinators.

This poster highlights the variation of the course goals and its hidden curriculum (e.g. Martin, 1976) from year to year, depending on the instructor in charge. For example, the amount of class time spent on discussing "What it means to be a math graduate student?" varied greatly depending on the instructor, as well as attitudes towards teaching. Such variability of goals (e.g., teaching as a primary focus vs. teaching as a secondary focus), assignments (e.g., writing NSF grant proposals vs. writing teaching statements) and the overall tone (e.g., spend as little time on teaching as possible vs. teaching is an important part of your job) of the course has led to highly variable outcomes and student perceptions of the department's TA preparation over the years. Thus, there is a need for more consistency in the course, as well as better practices in its instruction, especially taking into account that this might ultimately be the only teaching preparation that graduate students going into academia would ever get.

As a result of these experiences, the author produces a list of suggestions for Version 4 based on all three previous versions, the extant literature and constraints within the department towards a more realistic and productive course, which could benefit the author's own department, as well as other institutions looking into starting or improving their TA teaching preparation.

References

- Martin, J. R. (1976). What should we do with a hidden curriculum when we find one? *Curriculum Inquiry*, 6(2), 135-151.
- McGivney-Burelle, J., DeFranco, T. C., Vinsonhaler, C. I., & Santucci, K. B. (2001). Building bridges: improving the teaching practices of TAs in the mathematics department. *Journal of Graduate Teaching Assistant Development*, 8(2), 55-63.
- Shannon, D. M., Twale, D. J., & Moore, M. S. (1998). TA teaching effectiveness: The impact of training and teaching experience. *The Journal of Higher Education*, 69(4), 440-466.
- Speer, N., Gutmann, T., & Murphy, T. J. (2005). Mathematics teaching assistant preparation and development. *College Teaching*, 53(2), 75-80.