Examining College Precalculus Teachers' Noticing of Mathematics Department Curriculum Materials

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This preliminary report will focus on how college precalculus teachers, mostly graduate teaching assistants, interact with department-provided curriculum materials. We specifically address what collegiate teachers notice in curriculum resources while planning. Comparisons will be drawn between first-time instructors and those with more experience, ultimately informing what and how collegiate teacher educators might incorporate experiences for precalculus teachers to develop curriculum use practices.

Keywords: Curriculum, Graduate Teaching Assistant, Precalculus, Teacher Training

Curriculum materials are at the core of lesson planning, influencing what teachers plan for and enact in their classrooms (Brown & Edelson, 2003) and ultimately influencing what learning opportunities are provided. However, we still know little about how this influence is exerted (Stein, Remillard, & Smith, 2007), and we know even less about undergraduate education.

Collegiate teaching practices are widely underrepresented in the literature (Speer et al., 2010) and specifically, we know very little about how collegiate teachers learn to use curriculum, and further how varying designs influence use. This preliminary report will focus on how college precalculus teachers, mostly GTAs, interact with department-provided curriculum materials, specifically what they attend to within a lesson, and inform what and how teacher educators might incorporate experiences for collegiate teachers to develop curriculum use practices.

The data was collected at a large doctoral-granting university, with half the teachers being first-time instructors of record. Further, the mathematics department, as part of an ongoing effort to support active learning in their classrooms, developed an Open Educational Resource (OER) to be put into use for the first time during the semester. This joined the other curriculum resources already provided - a course packet of worksheets to be used by students in class, online teacher lesson guides, and a set of online homework assignments.

The main research question addressed in this report is *how, and to what extent, do precalculus teachers interact with department-provided curriculum?* Narrowing the scope of this broad question, this study aims to address the following questions:

- 1. What do teachers *notice* while using department-provided curriculum materials to plan?
- 2. In what ways does the department-provided curriculum inform teachers' lesson plans?

We use the Curricular Noticing Framework (Dietiker et al., 2018) to describe this interaction. Curricular noticing is a set of skills "that enable teachers to recognize, make sense of, and strategically employ opportunities available within their curriculum materials" and is comprised of three interrelated skills: *Curricular Attending, Curricular Interpreting*, and *Curricular Responding*.

In this preliminary report, we specifically focus on how what is in the curriculum and the format of the curriculum influence teachers' attention when planning a lesson and how this informs the work of teacher trainers and educators. Further analysis of this data will link teacher interactions and use of curriculum to teacher training, pedagogical goals and beliefs, and student factors such as target audience and achievement gaps, thus providing a more complete picture of the role teacher noticing plays in precalculus courses.

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