

HOW DO MATHEMATICS EDUCATION PROFESSORS DECIDE WHAT TO TEACH IN GRADUATE LEVEL CURRICULUM COURSES?

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Even though there are many research studies related to the teaching of K-12 mathematics, few studies in the mathematics education literature relate to university-level teaching. In the U.S., undergraduate teaching has gained increased attention in the past few years due to calls from the National Research Council (1996) and the National Science Foundation (1996). However, from our review of the literature, studies related to graduate-level teaching are very few and they are not particular to mathematics education. Herzig (2002), for example, studied mathematics doctoral students' understanding of mathematical culture and its possible implications for instruction. She indicated that graduate students education is important since these students will be the next generation of teachers for undergraduate and graduate level courses. In a "domino" effect, their education impacts mathematics education at all levels. Therefore, there is a need to study how professors teach graduate students.

In this short oral presentation, we will report our investigation on how three professors of mathematics education in the United States (two male, one female) decide what to teach in their graduate-level mathematics curriculum courses. Curriculum courses are our special interest because they capture three important aspects of professors' beliefs: their views of mathematics, their views of mathematics teaching, and their views of mathematics learning for K-12 students.

We have interviewed the professors individually for an hour and investigated artifacts related to the course (such as syllabi and personal notes). The analysis of the interview transcripts is the backbone of the report. We found that professors' designs of their courses change depending on: 1) their views of mathematics curriculum for K-12; 2) their views of graduate students' contributions to classroom atmosphere; and 3) the changes they want to see in graduate students. From our analysis, professors' research agenda was the main contributor to how they interpreted the three aspects listed above and why they implemented very different mathematics curriculum courses for graduate students.

References:

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