

INVESTIGATING THE COMPLEX NATURE OF MATHEMATICS TEACHING: THE ROLE OF BEGINNING TEACHERS' PERCEPTIONS IN THEIR PRACTICE

Babette M. Benken
Oakland University

Teachers' beliefs has become an important area of study for mathematics teacher education (Thompson, 1992). In order to gain a picture of the complex nature of teaching from teachers' perspectives, their beliefs with which they define their work need to be understood. Specifically, teachers' beliefs about what mathematics is, and what it means to know, do and teach mathematics may be driving forces in the teaching of mathematics. Teachers' beliefs provide a window to understanding their actions, experiences, and how they interpret events, and can therefore help us to understand teaching and the process of learning to teach.

Focusing merely on beliefs does not explain the entire picture. Researchers must gain a shared understanding of teachers' thinking in the context within which practices are developing (Putnam & Borko, 2000; Wilson & Cooney, 2002). More research is needed to understand the complex relationship between teachers' beliefs, knowledge, and the realities of the classroom. This study aims to contribute to the literature on mathematics teachers' beliefs by shedding new light on how those beliefs relate to practice, thus adding to existing knowledge on mathematics teaching, as well as the process of learning to teach.

In this presentation I will share findings from an interpretive case study of one secondary mathematics teacher (Laurie) in her third year of teaching. Primary sources of data include interviews (12) and classroom observations (15) spread throughout a semester of teaching. Through quotations and visual representations, I describe the following: guiding principles that emerged during analysis as characteristic of Laurie's thinking about her practice, as well as her actual observed practice; the beliefs that appear to support these principles; and how these beliefs were related to her teaching. This relationship was theorized to involve multiple factors including: (1) teachers' beliefs about mathematics, teaching and learning, (2) teachers' content and pedagogical content knowledge, and (3) teachers' perceptions of aspects related to the setting (e.g., school and classroom). Findings suggest that all of these factors are related in complex ways and played a role in shaping this beginning teacher's decision-making and practice. The poster will depict a model illustrating this relationship.

References

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