

A CRITICAL EXAMINATION OF A COMMUNITY COLLEGE MATHEMATICS INSTRUCTOR'S BELIEFS AND PRACTICES

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The purpose of the study was to investigate a community college mathematics instructor's beliefs. Specifically, the study identified beliefs about the teaching, learning and nature of mathematics, the effect of mathematics education faculty and a teacher education program on challenging beliefs, and beliefs about professional identity as a mathematics teacher. In examining beliefs about teaching, the research team focused on professed beliefs and beliefs in action in both technology and non-technology classroom environments.

Teacher beliefs and practices as a research domain gained much attention over the last two decades. In previous research Jakubowski, Wheatley and Shaw (1990) asserted that "... the personal epistemologies of teachers and beliefs about the nature of mathematics and science account for major differences in teacher practices." Researchers have demonstrated that beliefs influence knowledge acquisition and interpretation, task definition and selection, and interpretation of course content. According to Tobin and Jakubowski (1990), the view a teacher holds of mathematics or science influences classroom interactions and teaching goals. In general, teacher beliefs can have a strong influence on a teacher's approach to teaching mathematics.

Data, gathered over two spring semesters, included audio-taped interviews, observations, videotaped class sessions, field notes, document analysis, drawings (picture of mathematics), and written responses to alternative scenarios. Findings indicate that his beliefs about both the nature and pedagogical dimensions of mathematics were reflected in his classroom actions. Through the analysis of interviews, videotapes and written documents it appears that a formal teacher education program had an effect on his beliefs and practice about teaching learning mathematics, especially in computerized classroom settings.

References

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- Tobin, K., and Jakubowski, E. (1990). Cognitive process and teacher change. Paper presented at the annual meeting of the American Education Research Association, Boston, Mass.