Geometry Teaching Knowledge: A Comparison Between Pre-Service and Current High School Teachers

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Abstract: Research has shown that Mathematical Knowledge for Teaching (MKT) is necessary to be a successful teacher, but little research has been done in the secondary mathematics levels. Some researchers believe that individual subjects in mathematics require specific MKT skills. One subject of particular interest is Geometry because it is a field in mathematics in which every student in the United States is required to study in order to fulfill high school graduation requirements.

In this talk, I will discuss my study which compares the Geometry Teaching Knowledge between pre-service teachers and current high school geometry teachers. Data was collected via an online assessment developed by Herbst and Kosko (2014), a post-assessment survey, and interviews. Additional data was collected through observations of one pre-service teacher assigned to Geometry and three high school geometry teachers. I will present the development of the study as well as the results of the comparisons between pre-service teachers and high school teachers.


Shawnda Smith is a Doctoral Teaching Assistant at Texas State University as she works on her Ph.D. in Mathematics Education. She received her BA in Mathematics and MA in Mathematics from the University of Texas at Austin UTeach Program. She is a certified high school teacher for the state of Texas. Shawnda is interested in researching the Mathematical Knowledge for Teaching of pre-service teachers. She is excited to be joining California State University Bakersfield as an assistant professor in the fall.