Lynda Wynn*, lwynn@sdsu.edu, and Bill Zahner and Hayley Milbourne. Introducing Linear and Exponential Rates of Change in Linguistically Diverse Secondary Classrooms: Exploring Connections Among Curriculum, Tasks, and Student Understandings. Preliminary report.

We examine how two 9th grade integrated mathematics teachers from a linguistically diverse school introduced linear and exponential rates of change, and we describe how their students demonstrated learning on a written assessment (n=64) and a set of clinical interviews (n=20). The Common Core State Standards contrast exponential rates, "equal factors over equal intervals," from linear rates, "equal differences over equal intervals," earlier in the secondary mathematics curriculum than previous state standards. To teach this new topic, the two teachers used different curriculum materials as the basis for their instructional planning. We found evidence that students learned different concepts. For example, many students in one class successfully used a general formula to fit an exponential function to a table, but struggled to use this formula on a contextualized problem. Our preliminary analysis, using Lobato et al.'s (2013) focusing framework, indicates that students' performance can be traced back to the teachers' use of particular tools in the instructional environment such as "ratio tables." We discuss the connections between the understandings that students demonstrated and the different foci of the classroom activities that may have supported these student interpretations. (Received September 26, 2017)