

1125-N1-1363 **Biyao Liang*** (leungbiyao@uga.edu), 105 Aderhold Hall, Athens, GA 30602, and **Kevin C. Moore.** *Rate of Change as a Feature of Partitioning Activity: The Case of Lydia.*

Numerous researchers have argued that coordinating amounts of change of one quantity with equal increments of change in another is critical for students to understand rate of change. In a semester-long teaching experiment designed to investigate pre-service secondary mathematics teachers' graphing activity, we observed a student, Lydia, regularly coordinate the amount of change of one quantity with respect to another by considering equal partitions in the latter quantity. We illustrate that her thinking about rate of change, however, was constrained to carrying out particular partitioning activity (as opposed to a quantification of an operative, covariational relationship). Moreover, her way of thinking involved her carrying out the "same" activity between graphs and situations, the elements of which entailed figurative or sensorimotor features. We will conclude the presentation by discussing the mathematical consequences of her actions including how they constrained her reasoning with rate of change in novel graphing situations and representational systems. (Received September 16, 2016)