Advanced Mathematics Students’ Evoked Concept Image of Limits of a Function

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Abstract: Based on Advanced Mathematical Thinking and cognitive theories about the construction of mathematical concepts, this study investigates evoked concept image of limits of four students registered in an advance mathematics course. Students participated in task-based interviews where they were asked about their formal and informal concept definition of limits, visualization of the limit of a function, and their interpretation of a theorem that utilizes limits. The analysis discusses the evoked concept images varying from viewing a limit as a procept, to one formulated around the concept definition with misconceptions about the relation of epsilon and delta.

Christine Herrera is a Gates Millennium Scholar and a Doctoral Teaching Assistant at Texas State who is pursuing her Ph.D. in Mathematics Education. Christine received her MS in Mathematics and BS in Mathematics from Colorado State University. She was the instructor of record at Colorado State University for Math in the Social Sciences. As a Graduate Teaching Assistant at CSU, she taught College Algebra 1 and 2, and Matrices and Linear Equations. Christine is interested in conducting research to investigate the factors that support high achievement among at-risk students in upper division, proof-based mathematics courses.