

1023-P5-1699      **Timothy C. Boester\*** (tcboester@wisc.edu), Department of Educational Psychology, 1025 W Johnson St, Madison, WI 53706. *A Classroom Study of Undergraduates' Understandings of Limits*. Preliminary report.

In finding both embodied cognition and APOS to be inadequate for describing students' conceptions of limits, a new cognitive structure was developed to reflect how the dynamic conception of limit is fundamentally different than the static conception, but that the static conceptual schema should encompass the dynamic one.

Among other modifications to the curriculum in a WES (Wisconsin Emerging Scholars) first-semester calculus discussion section, students discussed a story problem, developed for the study, about manufacturing tolerances at a bolt factory in order to better understand the internal logic of the formal definition's quantification schema.

Students participated in the study by having their written work (homework, journal entries, quizzes, and tests) collected (N=14), and some (n=8) also elected to participate in a recurring interview about calculus topics (limits, derivatives, integrals, and the fundamental theorem of calculus) and a final interview about explaining mathematical proofs. The quantitative and qualitative data analysis for this dissertation study is currently underway and preliminary results will be ready by January, 2007. (Received September 26, 2006)