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*Teaching Infinite Series: A Study on Students' Conceptual and Procedural Understanding of
Infinite Series in Calculus.*

The topic of infinite series poses significant difficulties for students in second-semester calculus. Research on calculus reform projects of the past 15 years indicates non-traditional teaching strategies may improve students' conceptual understanding of topics in calculus. A recent study explored students' understanding of infinite series, and investigated the effects of reform-based instructional strategies on students' understanding of series. For the study, a Series Understanding Instrument (SUI) was developed and used to gather data on student understanding of series during the three-week teaching experiment. Instruction in one section of students utilized nontraditional classroom strategies and activities such as visualization, writing in class, and cooperative learning. Another section of students, taught with a traditional lecture-based approach, served as the control group. Three course assessments provided data on students' procedural understanding of series, and the SUI provided additional data on students' conceptual understanding of series. Results from these assessments will be presented during the session. Some results from subsequent research targeting high-ability students' conceptions of series will be discussed as well. (Received September 17, 2008)