

**Meeting:** 1003, Atlanta, Georgia, MAA CP V1, MAA Session on Research on the Teaching and Learning of Undergraduate Mathematics

1003-V1-914      **Erick Brian Hofacker\*** ([Erick.B.Hofacker@uwrf.edu](mailto:Erick.B.Hofacker@uwrf.edu)), 206D North Hall, River Falls, WI 54022, and **Pam Katzman** ([pamela.katzman@uwrf.edu](mailto:pamela.katzman@uwrf.edu)), 206E North Hall, River Falls, WI 54022. *A Study in First-Semester Calculus using Various Technologies*. Preliminary report.

The following paper will examine how the TI-89 Computer Algebra Systems (CAS), Microsoft Excel, and various Java applets were used in various experimental technologically enhanced sections in first-semester Calculus courses taught at a four-year university in the Midwest.

Interpretative data was collected to describe how the instructors incorporated the technology into lectures, how students were able to use the technology outside of class, and how the instructor integrated the technology into assignments, group projects, quizzes, and exams. Electronic Journals were kept during the semester and used to gain a better understanding of how well students conceptually understood the idea of derivative and integral. Student work on exams is compared and analyzed for students that did and did not have access to certain technological activities during instruction.

Quantitative Data was also collected at the end of the semester in the experimental courses to see how student attitudes toward math, student perseverance towards completing math problems, and student understanding of how to interpret mathematical understanding from outputs produced by machines changed during the course of the semester. (Received September 30, 2004)