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James S Rolf* (jim.rolf@yale.edu), Department of Mathematics, Yale University, 10 Hillhouse Avenue, New Haven, CT 06511, and **Yu-Wen Hsu, Miki Havlickova, Susie Kimport** and **Jennifer Frederick**. *Using Video, Online Quizzes and Peer Instruction to Teach Integral Calculus*. Preliminary report.

We report on the initial implementation of an experiment to combine the use of short instructional videos, pre-class online quizzes, and peer instruction in Integral Calculus. Our goal was to push basic instruction outside of class via short videos and combine this with pre-class online quizzes to allow class time to focus on harder concepts and higher order thinking skills. We believed the availability of data from both video analytics and quiz responses would create an ideal Just-in-Time Teaching environment and enable the instructor to tailor class towards specific needs of the students. We also believed that using peer instruction would provide an effective mechanism to extend student knowledge in class.

We hypothesized that combining these three elements would positively impact both student learning and attitudes toward mathematics.

We will outline the experiment designed to assess each of these questions. In particular we will present data from pre/post tests and surveys, exam performance, and qualitative observations by neutral observers. Our analysis will attempt to discriminate whether the experimental condition is correlated with stronger performance on higher order questions, stronger engagement during class, and other perceptions that influence learning. (Received September 17, 2013)