

1116-R5-1858

Cassie Williams* (willi5c1@jmu.edu), James Madison University, and **John (Zig) Siegfried**, James Madison University. *Investigating Student Learning Gains from Guided-Inquiry Activities in a Flipped Calculus I Course*. Preliminary report.

The flipped classroom has garnered attention in post-secondary mathematics in the past few years, but much of the research on this model has been on student perceptions rather than its effect on the attainment of learning goals. Instead of comparing to a “traditional” model, in this study we investigated student learning gains in two flipped sections of Calculus I. In this talk, we will focus on the question of determining immediate and longitudinal learning gains from delivering content via guided-inquiry activities in the classroom, and we will explore how these activities can be used to promote conceptual learning. In particular, we will consider a sequence of three activities designed to develop the conceptual definition of the derivative. We will share qualitative and quantitative data gathered from post-activity surveys and quizzes, as well as aggregate data from exams and student work samples. (Received September 21, 2015)