

1135-H1-172 **John A Kerrigan*** (johnkerr@rci.rutgers.edu), 110 Frelinghuysen Road, Piscataway, NJ
08854. *Productive Failure in the Flipped Mathematics Classroom*. Preliminary report.

Over the past few years, the flipped classroom approach has been gaining popularity in higher education (Abeysekera & Dawson, 2015), particularly in mathematics (Muir & Geiger, 2015). While many studies have addressed differences between the flipped classroom and traditional methods of instruction, few have closely examined how to design activities in a flipped classroom that develop students' higher-order thinking skills (O'Flaherty & Phillips, 2015; Song & Kapur, 2017). Kapur's (2008) theory of productive failure states when students have an opportunity to generate and explore solutions to a challenging task prior to being instructed on it, they are better positioned to consolidate their knowledge during and after instruction. This mixed methods study involves two undergraduate flipped math courses at a large state University, one of which was taught using the productive failure model and the other the traditional flipped classroom model. Quantitative data from a survey and from course assessments will be used to help explain students' performance in both treatment conditions, while qualitative data from a focus group interview and video footage of in-class problem solving will be used to better understand the learning and problem-solving processes in both treatment conditions. (Received August 07, 2017)