1106-R1-1460   **Julia Rose Murphy*** (`juliarosemurphy@gmail.com`) and **Jen-Mei Chang**. *Experience a Flipped Learning Outcome through Flipped Learning in an Introductory Linear Algebra Class.* Preliminary report.

Flipped learning is gaining traction in K-12 for enhancing students' problem solving skills at an early age; however, there is relatively little large scale research showing its effectiveness in promoting better learning outcomes in higher education, especially in mathematics classes. In this study, we examined the data compiled from both quantitative and qualitative measures such as item scores on the common final and attitude survey results between a flipped and a traditional Introductory Linear Algebra class taught by two individual instructors at California State University, Long Beach in Fall 2013. Examination of the quality and depth of student responses from the common final exam showed that students in the flipped class produced more comprehensive and well-explained responses to the questions that required reasoning, creating examples, and more complex use of mathematical objects. Furthermore, students in the flipped class performed superiorly in the overall comprehension of the content with a 21% increase in the median final exam score. Overall, students felt more confident about their ability to learn mathematics independently and acquired many meta-skills that are useful in helping them succeed in other math classes after having gone through this flipped class. (Received September 13, 2014)