



Changes to student self-efficacy and motivation with Team-Based Learning

Jeff Ford

August 1, 2019

Gustavus Adolphus College

- 30 students in a Liberal Arts mathematics course

Motivation

- 30 students in a Liberal Arts mathematics course
- Small mid-western liberal arts college

Motivation

- 30 students in a Liberal Arts mathematics course
- Small mid-western liberal arts college
- How can we change the attitudes about mathematics in these students?

- Pilot study to measure anxiety and self-efficacy

- Pilot study to measure anxiety and self-efficacy
- Mathematical Self-Efficacy and Anxiety Questionnaire (MSEAQ) [3]

- Pilot study to measure anxiety and self-efficacy
- Mathematical Self-Efficacy and Anxiety Questionnaire (MSEAQ) [3]
- Use of active learning techniques to improve self-efficacy [1]

- Pilot study to measure anxiety and self-efficacy
- Mathematical Self-Efficacy and Anxiety Questionnaire (MSEAQ) [3]
- Use of active learning techniques to improve self-efficacy [1]
- Use of Team-Based Learning (TBL) to decrease anxiety [4]

- TBL
- Readiness readings and assessments

- TBL
- Readiness readings and assessments
- Team activities

Course structure

- TBL
- Readiness readings and assessments
- Team activities
- Mastery exams [2]

Course structure

- TBL
- Readiness readings and assessments
- Team activities
- Mastery exams [2]
- Career paper

- MSEAQ administered 3 times

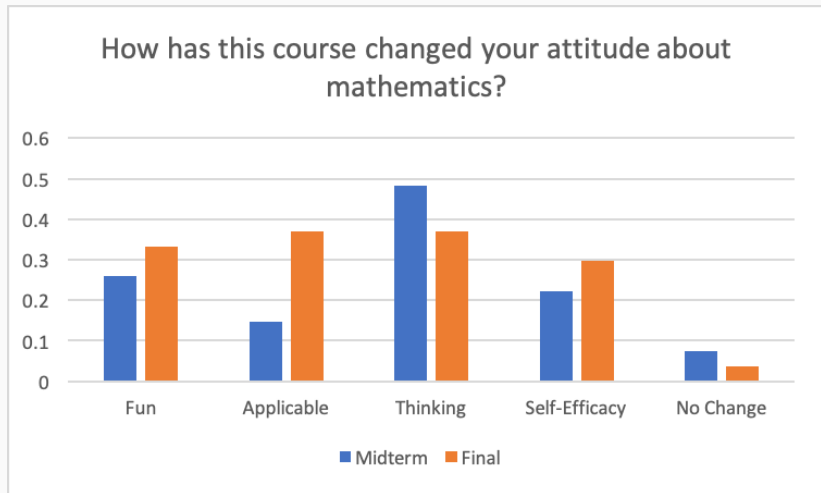
- MSEAQ administered 3 times
- Qualitative questions at midterm and final assessment.

	Initial	Midterm	Final
Self-efficacy	3.54	3.49	3.52
Anxiety	3.36	3.40	3.44

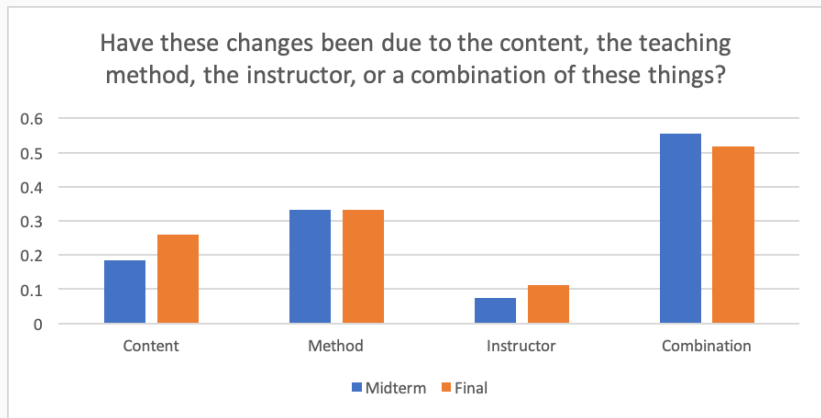
	Initial	Midterm	Final
Self-efficacy	3.54	3.49	3.52
Anxiety	3.36	3.40	3.44

Repeated measures ANOVA, nothing significant!

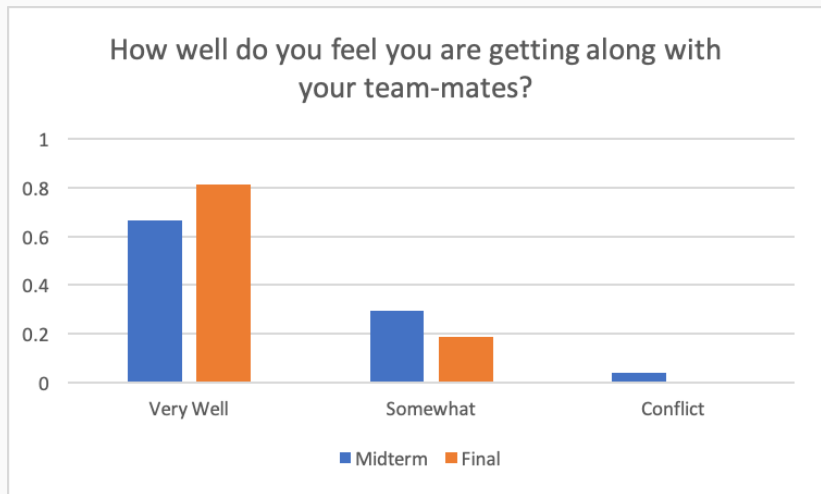
Qualitative questions



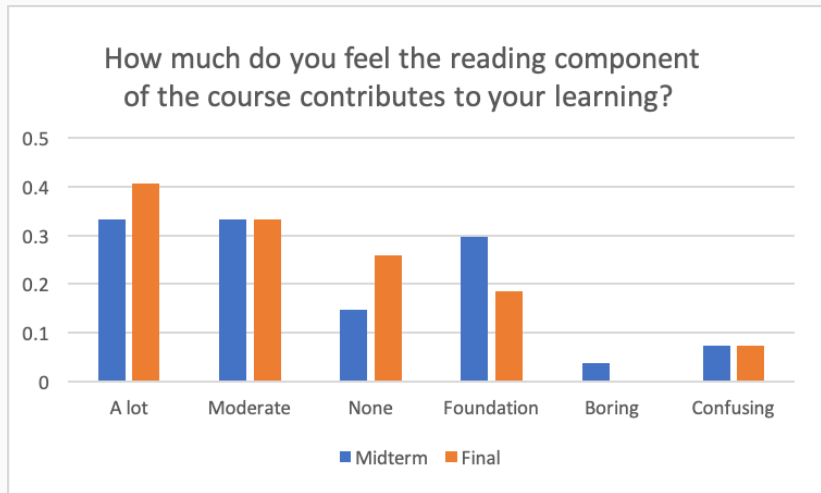
Qualitative questions



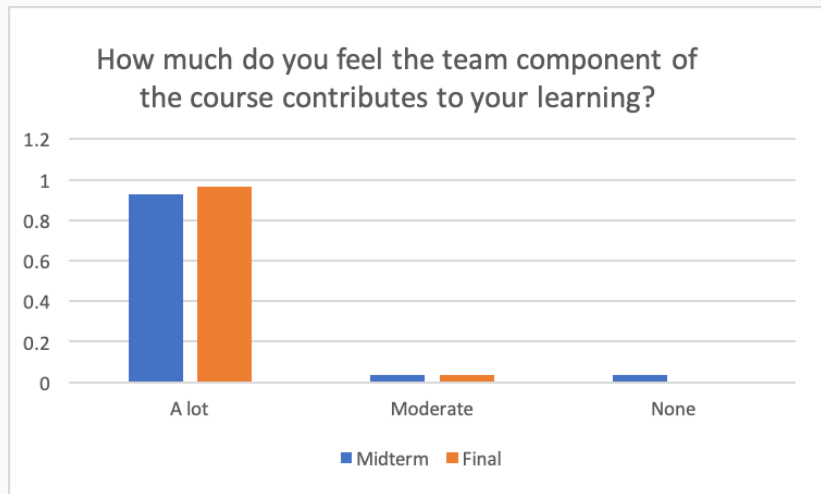
Qualitative questions



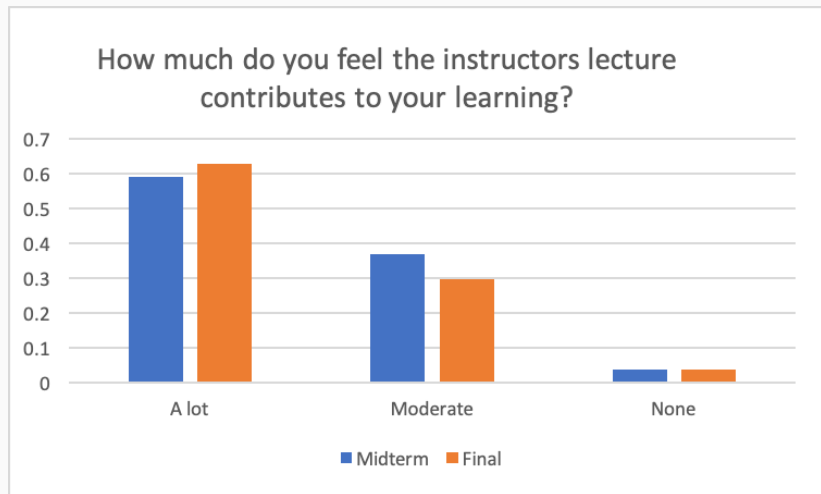
Qualitative questions



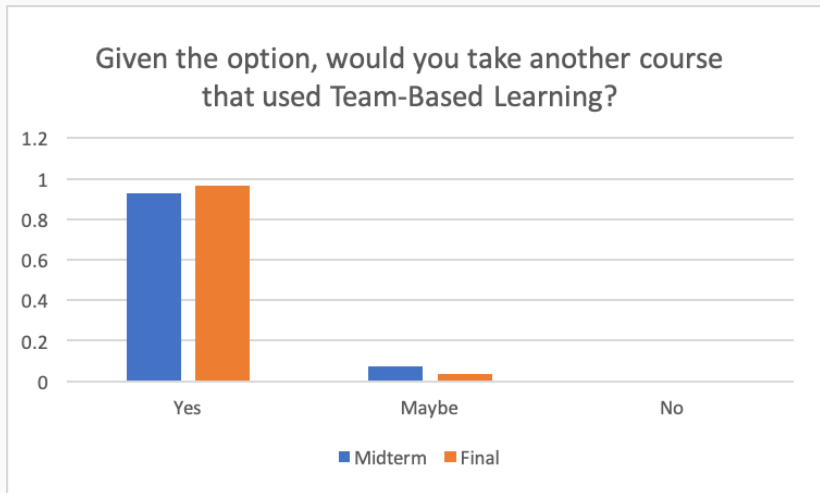
Qualitative questions



Qualitative questions



Qualitative questions





Dunn S Barrows, J. and C. Lloyd.

Anxiety, self-efficacy, and college exam grades.

Universal Journal of Educational Research, (1(3)):204–208, 2013.



T. Guskey and J. Bailey.

Developing Grading and Reporting Systems for Student Learning.

Corwin Press, 2001.



Diana Kathleen May.

Mathematics Self-Efficacy and Anxiety Questionnaire.

PhD thesis, University of Georgia, 2009.



L. Michaelsen, A. Bauman-Knight, and L.D. Fink.

Team-Based Learning.

Stylus, 2004.