

## Emily Dauk – Data Tools

**Research Question:** Does an emphasis on mathematical discourse, specifically the implementation of Collaborative Study Groups, impact student confidence and engagement when solving authentic, real world mathematics problems?

### Data collection methods

- **Qualitative:** student surveys, student interviews, co-teacher questionnaire, field notes
- **Quantitative:** compare work-completion rates at the start of the study to those at the end of the study to see if there is any change

### Student Survey Questions

All questions asked on a five-point Likert scale: 1 = strongly disagree and 5 = strongly agree	
Questions asked on both the pre-unit survey and the post-unit survey	Questions asked only on the post-unit survey
<ul style="list-style-type: none"><li>• I am good at math</li><li>• I enjoy math</li><li>• I am confident in my mathematical ability</li><li>• I am good at solving real world math problems</li><li>• It is easier to solve real world math problems when I discuss the problem with classmates</li></ul>	<ul style="list-style-type: none"><li>• It is easier to solve real world math problems when I work in Collaborative Study Groups</li><li>• Collaborative Study Groups have helped me become more confident in solving real world math problems</li><li>• I enjoyed working in Collaborative Study Groups</li></ul>

**Student Interview Questions:** Interview participants will be asked the following questions: (1) Describe collaborative study groups. (2) Did participation in collaborative study groups make it easier to stay on task during class? (3) Did participation in collaborative study groups make you more confident in solving real world math problems? As students answer the questions, the researcher will extend the conversation by asking the probing questions "Tell me more," "Why do you think so," and "How so."

**Co-teacher Questionnaire:** At the conclusion of the unit, the special education co-teacher will be given a questionnaire that contains the following questions: (1) Did you notice any changes in student confidence throughout the unit? Please explain. (2) Did you notice any changes in student engagement throughout the unit? Please explain. (3) Rate the level of overall student engagement on a scale from 1 (disengaged) to 5 (engaged). Why did you give this rating?