

Instructor and Student Reflections of a Flipped Class Model in a Sensory Evaluation of Foods Laboratory Course

Joseph Donald Donovan, B.S.

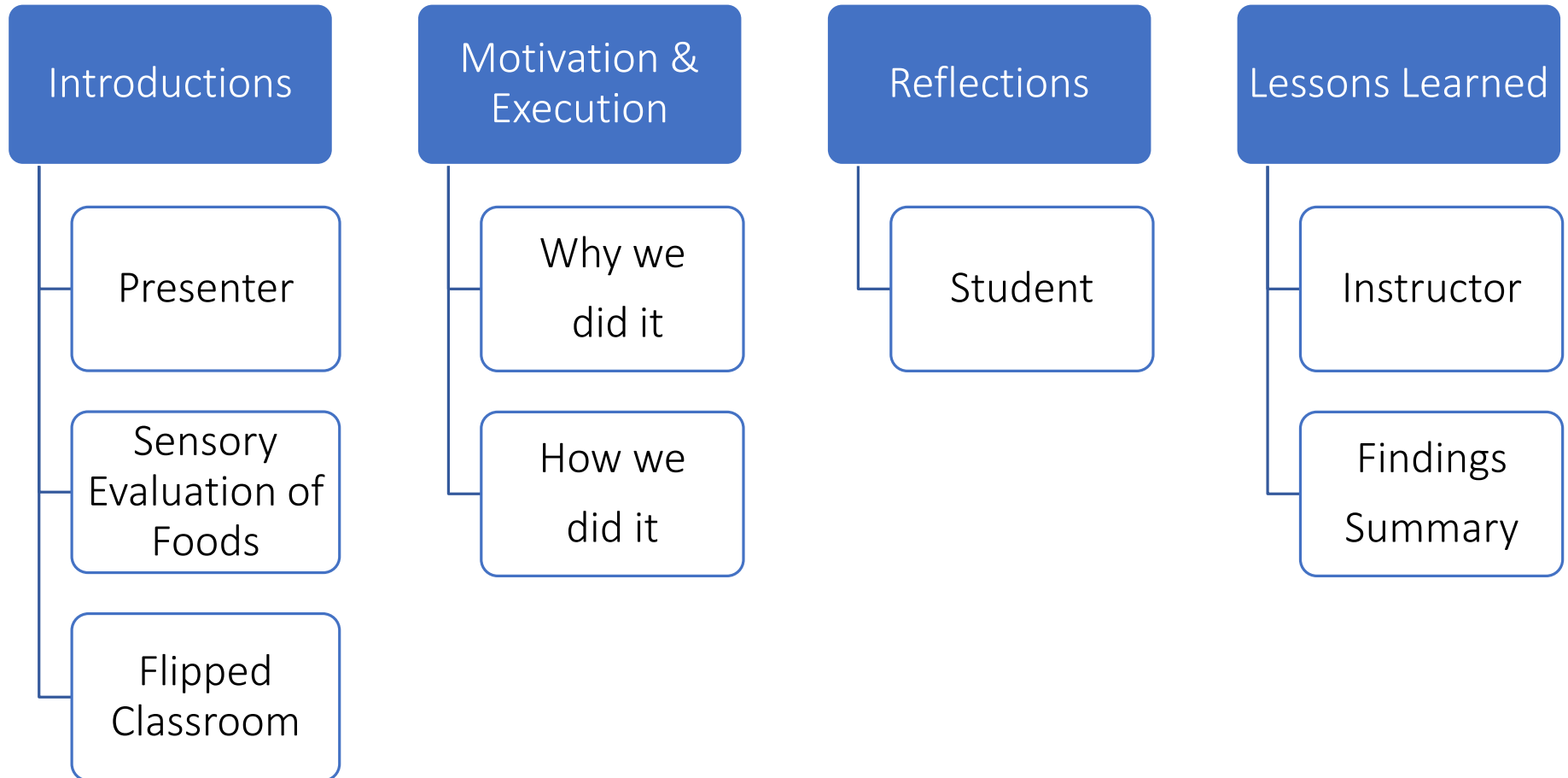
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Presentation Overview



Presenters



- Joseph (Joey) Donald Donovan
- Ph.D. candidate in Food Science and Human Nutrition
- Teaching and Research Assistant



- Soo-Yeun (Soo) Lee, Ph.D.
- Associate Professor
- Associate Head for Academic Programs

Sensory Evaluation of Foods



Food Science and Human Nutrition Sensory Evaluation of Foods (FSHN 302) students are...

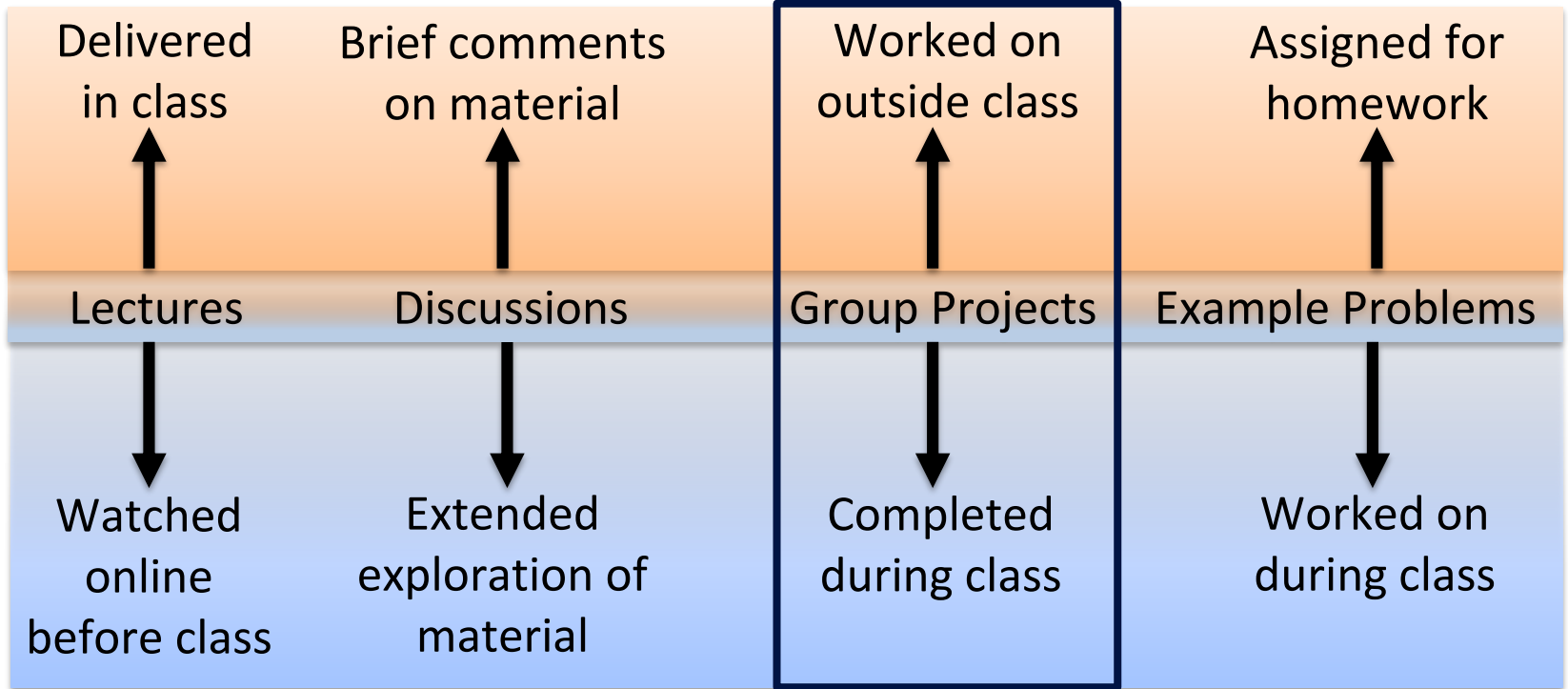
- Juniors & seniors (about 50 students total)
- Food Science and Human Nutrition majors or minors
- Have taken a basic statistics course
- Attend lab once a week (2 hours) and lecture twice (1 hour each)

“To understand and apply the knowledge of sensory evaluation as a discipline in the field of food science”

The Flipped Classroom

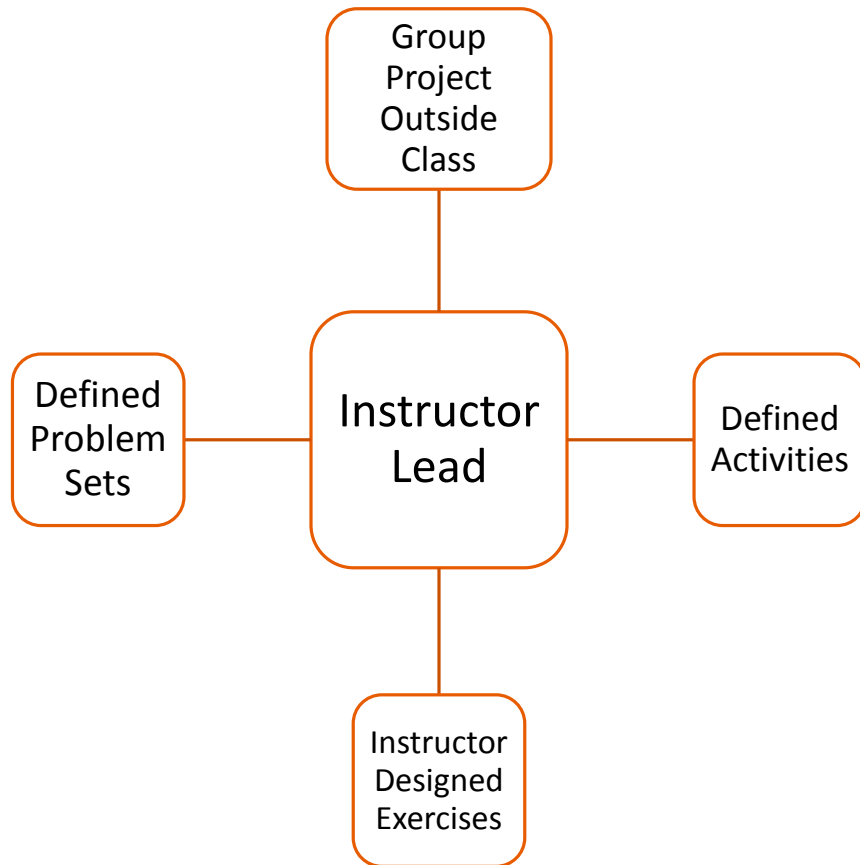
Taking traditional lecture-based assignments of the classroom and bringing them online

Traditional Lectures



Flipped Class

Why we did it- Structure vs. Goals



- Was this structure meeting our goals?
 - Were students actively engaging lecture material in the laboratory?
 - Are students confident in their knowledge?
 - Were students learning how to become sensory scientists?
 - Were students working as a team?

Why we did it- Performance

“The course is pretty good as is”

“The lab was very useful”

“The course material is relevant to my major”

“To improve, connect lecture concepts to lab”

“Make better use of lab time”

“Lab is a waste of time”

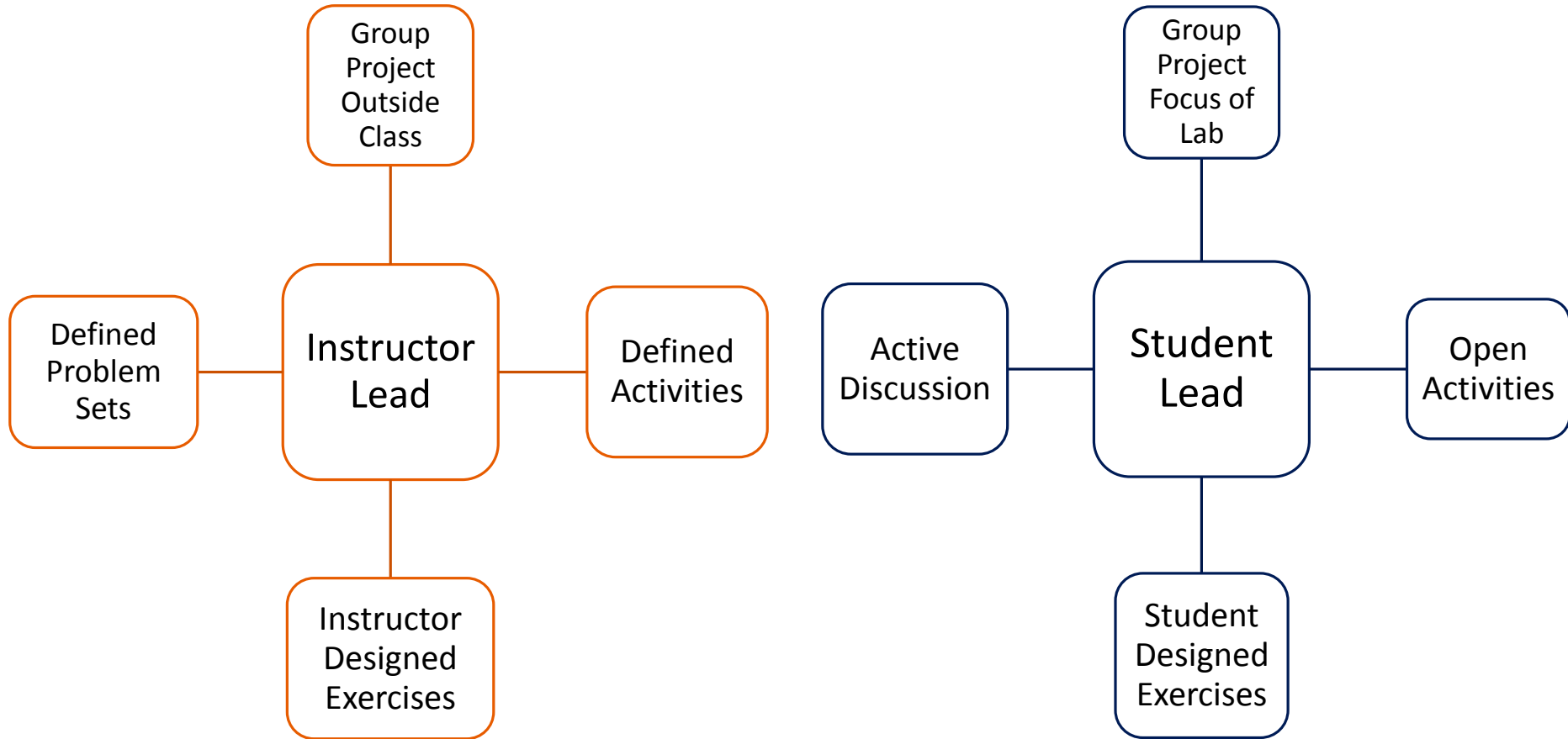
“The group project is disjointed”

“Provide more examples”

“The lab could get repetitive”

- Laboratory quality scores
 - 2011: 4.7/5
 - 2012: 4.7/5
- Excellent average grades
- Student comments

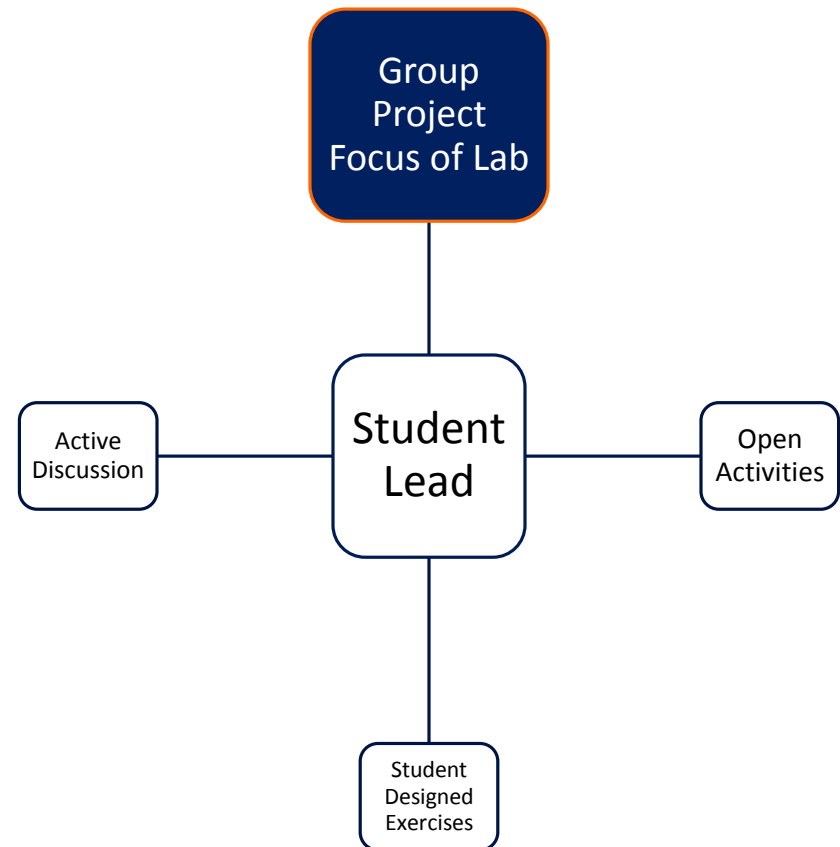
How we did it



How we did it- Group Project Focus

•Group Project Focus of Lab

- The project becomes the class and lab
- A semester long project where students are
 - Assigned a product category and scenario
- **Design, Execute, and Analyze** three types of sensory tests



How we did it-

•Open Laboratory Activities

- Daily objectives set the stage
- Activities progress project goals

Discrimination Testing 1: Test Design and Prep

o 2. Rinse Protocol: The complexity of your sample will dictate the most appropriate rinse for your test. You may need to use combinations and multiple rinses. As a guideline, your final rinse should always be at room temperature. In order to determine which rinse to use, try the following rinses with your samples and see which works best. At the end of trying the various rinses, decide how many rinses you will use and the order below:

1. Room Temperature Water: _____

2. Warm Water: _____

3. Carbonated Water: _____

Discrimination Testing 1: Test Design and Prep

Objective:

The main objective of this laboratory is to design and prepare the discrimination testing that will take place in the following week

Procedure:

I. Testing Design

- A. You have been given a scenario and products that you will use to guide you through the sensory tests you will run during this course.
- B. In order to conduct a discrimination test, the design of the experiment and many logistical details must be carefully thought out and planned beforehand. As a group, please answer the questions included in your Group Project Assignment Questionnaires under "Difference Testing" to get a basic view of how you will conduct your test.

you will also need to decide on several other important details for the test. Please answer the following questions:

Important details

binding codes for each of your samples. Use two separate codes for testing design:

_____ for each of your samples. Use two separate codes for testing design:

your sample will dictate the most appropriate rinse for your test. You may need to use combinations and multiple rinses. As a guideline, your final rinse should always be at room temperature. In order to determine which rinse to use, try the following rinses with your samples and see which works best. At the end of trying the various rinses, decide how many rinses you will use and the order below:

1. Warm Water: _____

3. Carbonated Water: _____

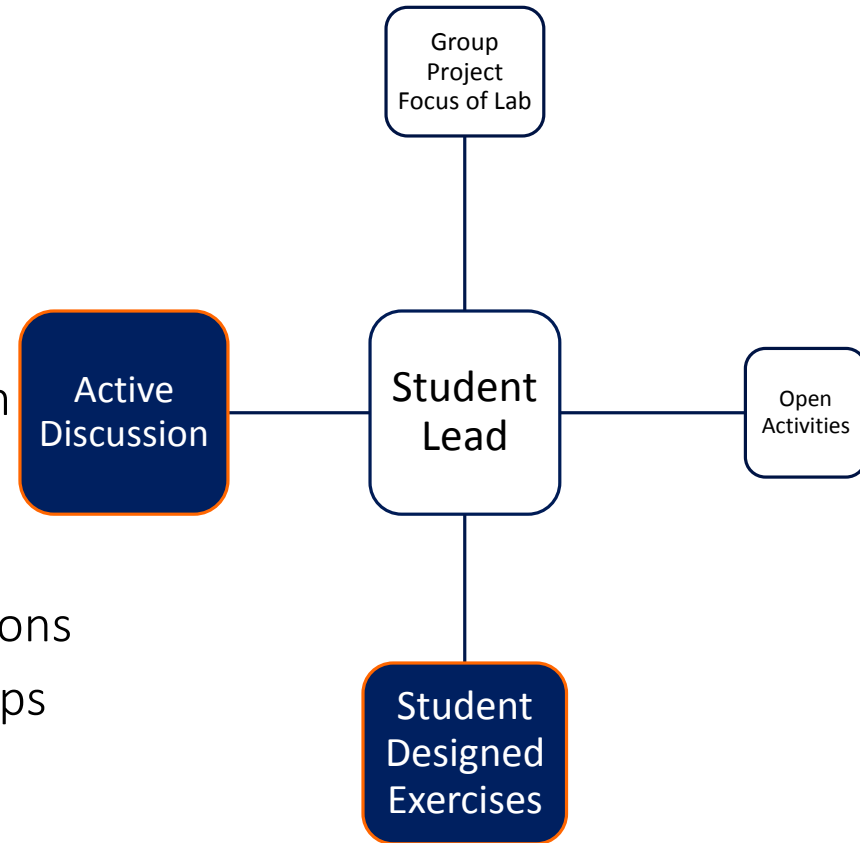
How we did it- Exercises and Discussion

•Student Designed Exercises

- Students design their own tests
 - What questions to ask?
 - How much sample is needed?
 - How many participants?
- Connecting online and in-class discussion material to make decisions

•Active Discussion

- Group members collectively made decisions
- Discussed problems/ideas between groups
- TA acts more as a “facilitator”



Student Surveys

Reflections

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Student

- Optional online survey
- 15 minutes in length
- 50 participants
- Results analyzed/interpreted with
 - Microsoft Excel
 - Wordle.net for word clouds

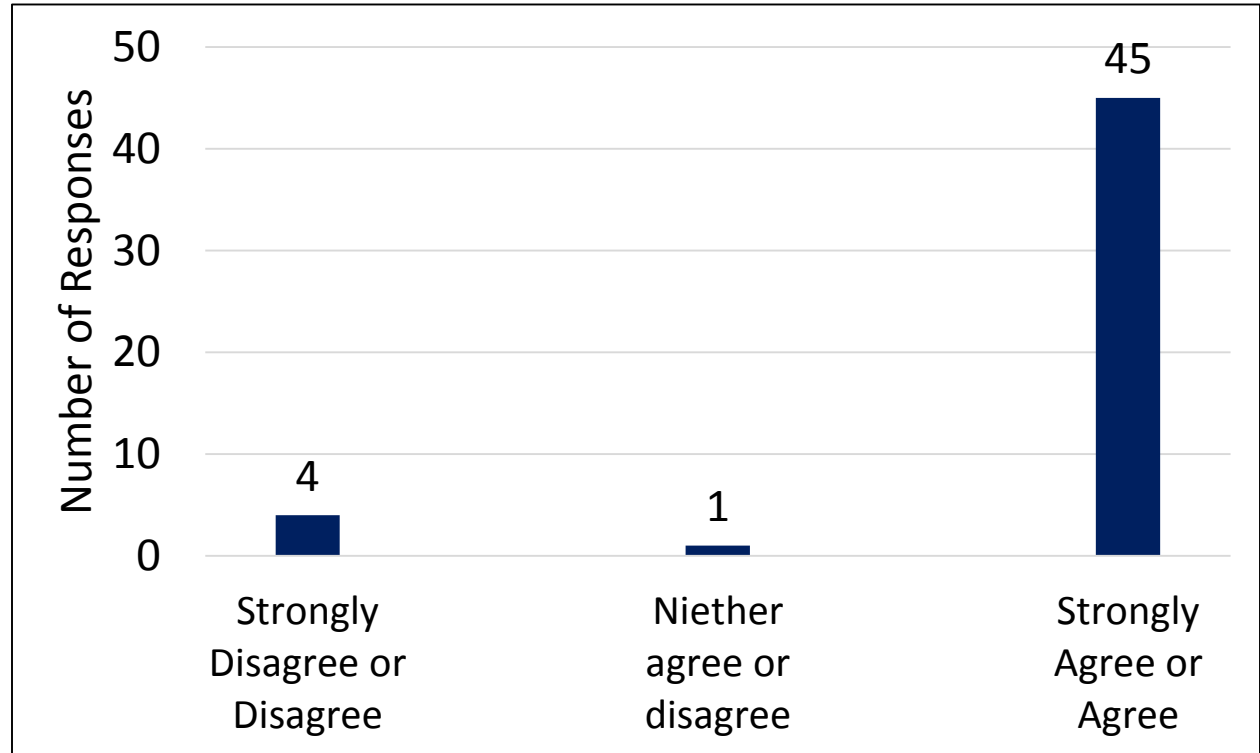
Student Reflections- Survey

Pre-Flipped Comments

“To improve class , connect lecture concepts to lab”

“The group project is disjointed”

“How much do you agree with the statement: the material covered in lab directly reflects what is taught in lecture ”



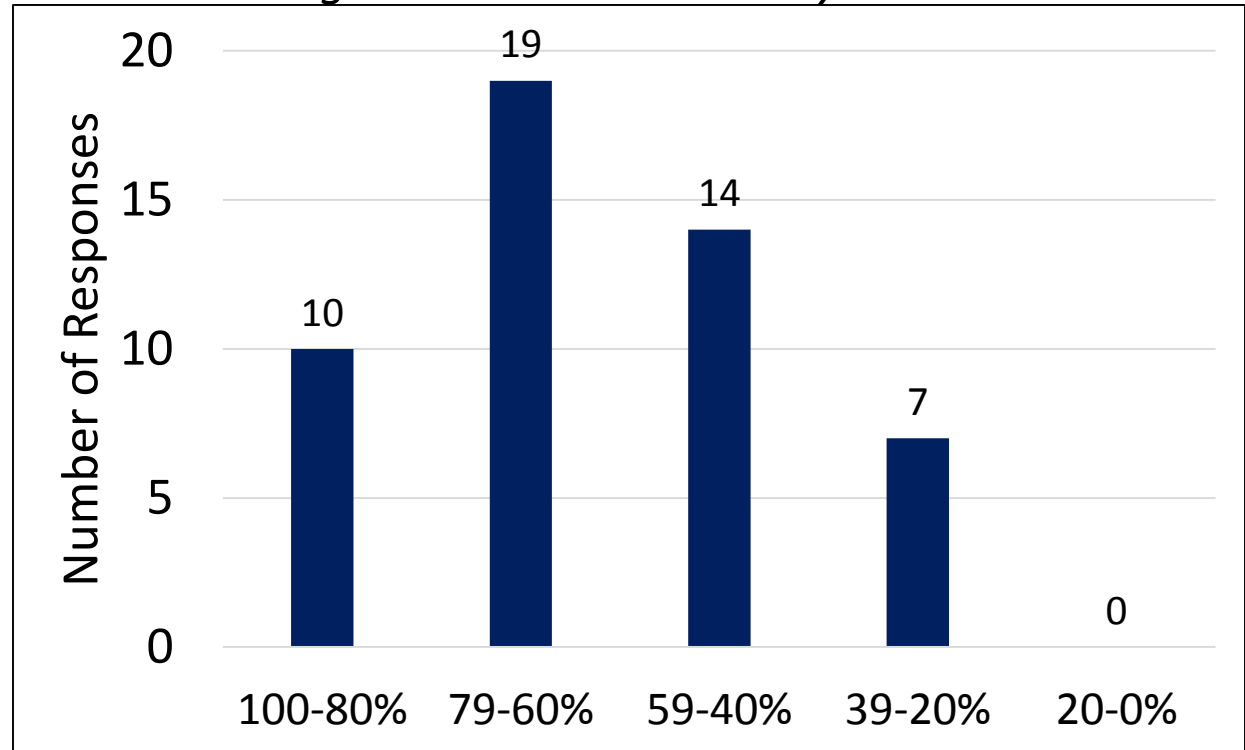
Student Reflections- Survey

Pre-Flipped Comments

“Make better use of lab time”

“Lab is a waste of time”

“What percentage of the group project is completed during lecture and laboratory sessions”



Student Reflections- Survey

Pre-Flipped Comments

“The course is pretty good as is”

“The lab was very useful”

“Please provide general feedback in relation to the laboratory”



Student Reflections- Survey

“Please provide general feedback in relation to the laboratory”



Academic Year	Course Quality Score
Fall 2011	4.7/5
Fall 2012	4.7/5
Fall 2013	4.7/5

Instructor Reflections

- Activity Planning
 - Restructure activity distribution
- Flipped Class Model
 - Student unfamiliarity
 - Education to ease apprehension
- Group Considerations
 - Long term motivation
 - Section-long or rotating groups

 Structure

 Education

 Groups

Findings Summary

Connect lecture material
to the laboratory

Help avoid common group
work troubles

**The Flipped
Laboratory**

Increased student
confidence in learned
material

Consider group structure
and activity time
commitment

Questions?

THANK YOU FOR YOUR ATTENTION

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