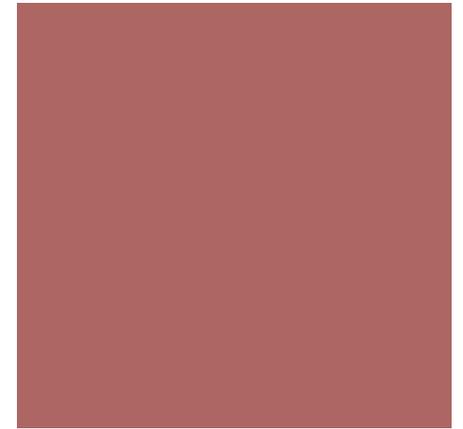




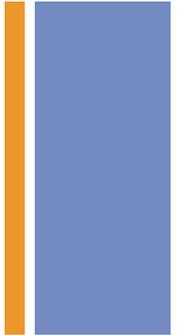
CDIO & Diversity Seminar
Chalmers University
October 10, 2018



Gender & CDIO: The Role of Instructors in Facilitating Inclusive Teamwork

Dr. Kacey Beddoes

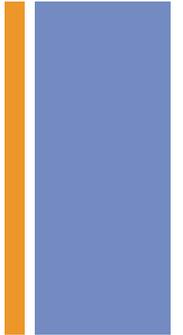
+ Overview



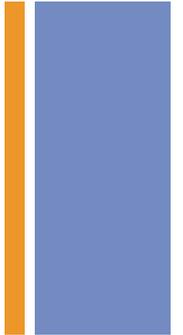
- Background & prior literature
- Interview study
- Training tool
- Recommendations

+ Findings from prior literature

- Teamwork growing in importance, but presents many openings for gender biases
 - Topics
 - Processes & interactions
 - Roles
 - Environments
 - Evaluation
- Women tend to take on non-technical team roles
- Women and other minority students receive lower peer evaluations
- Students may not perceive gender biases as such
- If they do, they are not likely to report them



+ Prior findings on team formation



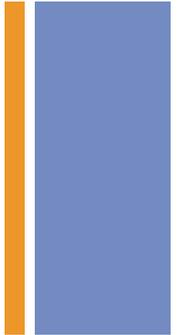
■ Self-selection

- Does not increase student satisfaction or learning

■ Assigned

- Take into account unique characteristics of each student
 - Maximizes the team learning experience
 - Characteristics include abilities, experience, gender, and other demographics

+ Purpose of Study

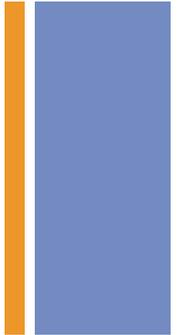


Examine professors' practices and knowledge surrounding teamwork and gender

- To what extent are professors practicing gender inclusive teamwork?
- Do professors take gender into consideration during team formation, facilitation or assessment?
- (How) do professors think about gender in teamwork?

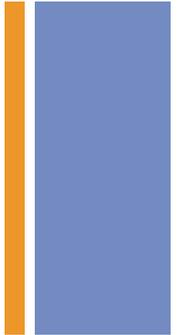
+ Methods

- Interviews with 39 engineering professors in the US
 - 3 universities
 - All engineering disciplines
 - Mix of men and women and career levels
- Overarching research question: *What and how do professors think about gender in engineering education?*
 - Teamwork was one of many topics

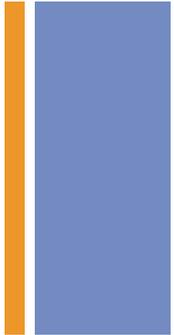


+ Findings

- Some awareness of best practices
 - But lack of implementation
 - “laziness”
 - Prior experiences
- Nearly all let students self-select teams
 - Reasoning
 - Work with people they felt most comfortable with
 - Topic that appeals most to the student
- Overwhelming lack of consideration of gender in teamwork
 - Planning
 - Implementing
 - Assessing
- Peer evaluations not valuable

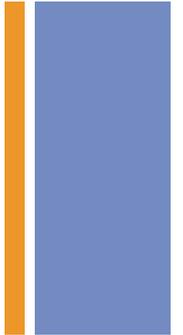


+ Findings: Problematic Discourses



- Leadership role
- Bad experiences are actually good

+ Conclusions from Study



- Need to further integrate gender awareness into faculty development, especially around teamwork
- Need tools and trainings
- Need further research and ongoing conversations about “best practices”



TARGET: Training and Resources for Gender Inclusive Teamwork





TARGET: HOME



Formation

Roles

Facilitation

Evaluation



TARGET: Team Formation

Learning Objective: Identify gender inclusive practices for forming teams and recall how various features of teamwork should affect decision-making around team formation



Please select the team formation strategies that you would like to learn more about! Once complete, please click the target icon in the upper left hand corner to go HOME.

TARGIT: Assigning Team Roles



Professional Skills



Team Roles

Note-taker

Team Manager



Technical Skills



Team Roles

Technical expert

Please select the picture of the different types of roles and skills that you would like to learn more about!

Next 



TARGIT: Team Facilitation

Learning Objective: Identify problems that women and students from other underrepresented groups can experience in teamwork, and choose strategies to minimize those problems

Gender Bias
Challenges

Pre-teamwork
Interventions

Check-ins

Project Topic

*Please select the team facilitation element that you would like to learn more about!
Once complete, please click the target icon in the upper left hand corner to go HOME.*



TARGET: Gender Bias Challenges



Offensive comments or “jokes”

For more information about microaggressions, please consult the following resources:

<http://breakingprejudice.org/teaching/gro-up-activities/microaggression-activity/>

https://academicaffairs.ucsc.edu/events/documents/Microaggressions_Examples_Arial_2014_11_12.pdf

https://www.unh.edu/sites/www.unh.edu/files/departments/unh_advance/PDFs/microaggressions.pdf

1

Women are not recognized for their contributions to the team,

2

Women’s ideas are ignored and/or not “heard” by fellow teammates,

3

Women may be expected to work in environments or situations where they feel uncomfortable or unsafe, and

4

There may be inappropriate or offensive comments or “jokes” made by teammates. Such slights may be overt and blatantly sexist, but can also be subtle and hard to detect microaggressions.

Next



- ▼ TARGIT
 - Welcome
 - Introduction
 - ▶ Home
 - ▼ Experiences Home
 - ▶ Experience 1
 - ▶ Experience 2
 - Recommended Best Practices
 - Wrap-up
 - References and Resources

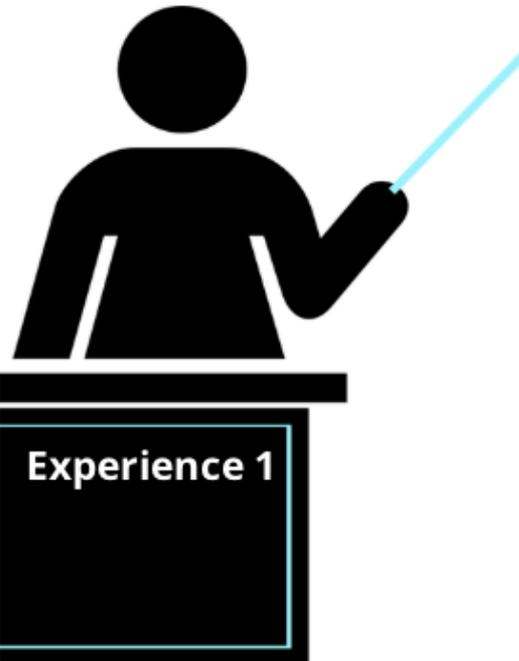


TARGIT: Experiences

We will now test what you have learned by looking at Example Experiences.

Select the Experience you wish to explore!

Once complete please click the target icon in the upper left hand corner to go HOME.



- ▼ TARGIT
 - Welcome
 - Introduction
 - ▶ Home
 - ▼ Experiences Home
 - ▶ Experience 1
 - ▼ Experience 2
 - Experience 2.1
 - Experience 2.2
 - Experience 2.3
 - Experience 2.4
 - Experience 2 Summary
 - Recommended Best Practices
 - Wrap-up
 - References and Resources



TARGIT: Experience 2

For this activity, answer the questions using the blue boxes as we move through the scenario and receive feedback on your responses.

Next, you need to form your teams. You decide that you will put four students on each team. **From the below strategies, how will you form student teams to maximize inclusivity?**

Students rank their choice of project, then you assign teams to avoid soloing women students

Assign teams randomly

Allow students to self-select their teams





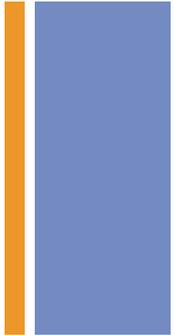
TARGIT: Recommended Best Practices

1. Do not allow students to self-select teams. Teams should primarily be formed by the instructor so that individual student characteristics can be considered during the formation process.
2. Consider whether the topics of your projects could be made more appealing to diverse groups.
3. Soloing women should be avoided with the exception of expressed concern by women themselves or after an in-depth classroom discussion.
4. Forming teams as heterogeneous or homogeneous should be done on a case-by-case basis depending on the particular class with consideration of the benefits and drawbacks of each.
5. Team roles should be designated from the beginning and team members should rotate roles on a schedule and spend equal amounts of time in technical and non-technical roles to better diversify student abilities and prepare them for the workforce.
6. Pre-teamwork interventions should be used to teach students about common problems and convey that you want problems to be reported.
7. Instructors should actively engage in teamwork facilitation throughout the course of the project to address gendered practices as they arise and to create a space where students are comfortable discussing teamwork issues in order to promptly make adjustments and avoid on-going negative experiences.
8. Women students should list their individual contributions to the team project in order to receive full recognition for their work.

Next

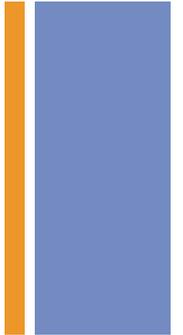


+ Formation and Planning Best Practices



- Consider if project topic can be made more appealing to a broader group
- Assign teams
- Avoid soloing minority students
 - **Except in certain circumstances**
- Assign team roles
- Create a plan for role rotation

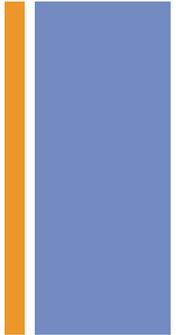
+ Facilitation Best Practices



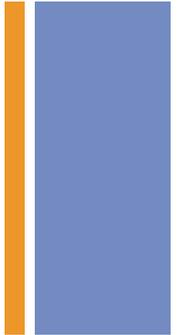
- Pre-teamwork interventions
 - Common problems encountered by teams
 - You want problems reported
 - General team-building exercises
- On-going active facilitation
 - Regularly scheduled check-ins
 - Have a plan for when problems arise
- Rotate roles per your plan

+ Evaluation Best Practices

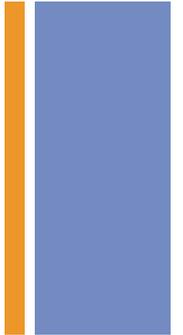
- Evaluate both process and product
- Have students list their individual contributions
- Group grade adjusted by self and group evaluation and individual contributions
 - Group only grade implies group work counts for everything and individuals only do well if the group functions
 - Individual only grade enhances individual outcomes
- Self and Peer Evaluation
 - Be aware of gender biases in both self and peer evals
 - Males typically rate other males higher than females
 - Conduct multiple times throughout project as team learns how to work together



+ Future Work



- Usability studies for TARGIT
 - Refinements & multiple versions
- Online bibliography
- Systematic Literature Review



Thank you!

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