

Using Reflection to Assess Perceptions of Teamwork in Undergraduate Seminar

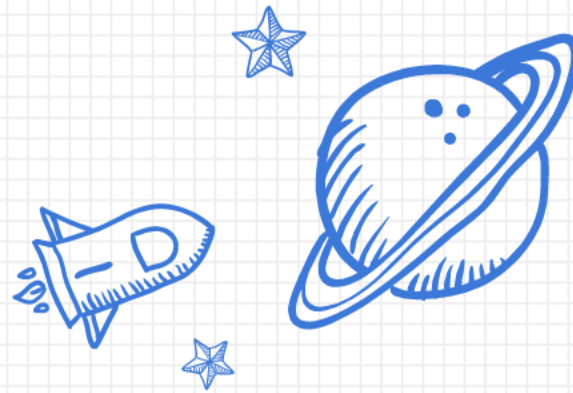


@ University of Texas at Austin

Introduction and Research Question

- ✗ What are STEM majors initial perceptions of teamwork?
- ✗ Can we use reflective writing to gauge their perceptions of teamwork?
- ✗ What qualitative themes of teamwork can we determine from their reflective writing?





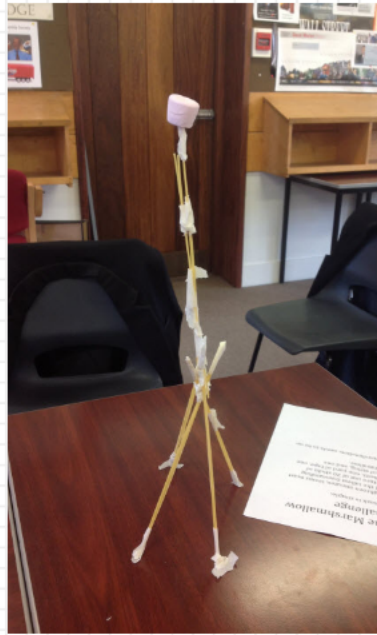
Reflection

Defined as the process of returning to an experience in order to gain a new perspective and understanding

Population and Course Description

- ✗ First Year Seminar Course in Engineering
- ✗ Students Go on to Take Physics Next Year
- ✗ 28 Students
- ✗ Large Public 4 Year University
- ✗ Meets Once a Week
- ✗ Serves as an Introductory Course to Address Early Concerns in Engineering and Physics





Marshmallow Challenge

- ✗ Materials
 - ✗ Spaghetti
 - ✗ String
 - ✗ Marshmallow
 - ✗ Masking Tape
 - ✗ Paper Bag
- ✗ Goal: Build the Tallest Freestanding Structure That Can Hold One Marshmallow
- ✗ Time Intensive: 18 Minutes Allotted
- ✗ Full Details @ marshmallowchallenge.com



Reflection Assignment

- ✗ Students are prompted to reflect on their experience
- ✗ Due by next week but strongly encouraged to reflect sooner
- ✗ Explicitly Asked
 - ✗ How well did your team do in the challenge?
 - ✗ What could you have done differently in the challenge?



What Themes Did We See?

Major Theme: Not Enough Involvement

"I think that I personally should focus on including everyone in the project and not let myself be hands on with the activity. I tend to take charge which has its pros and cons."

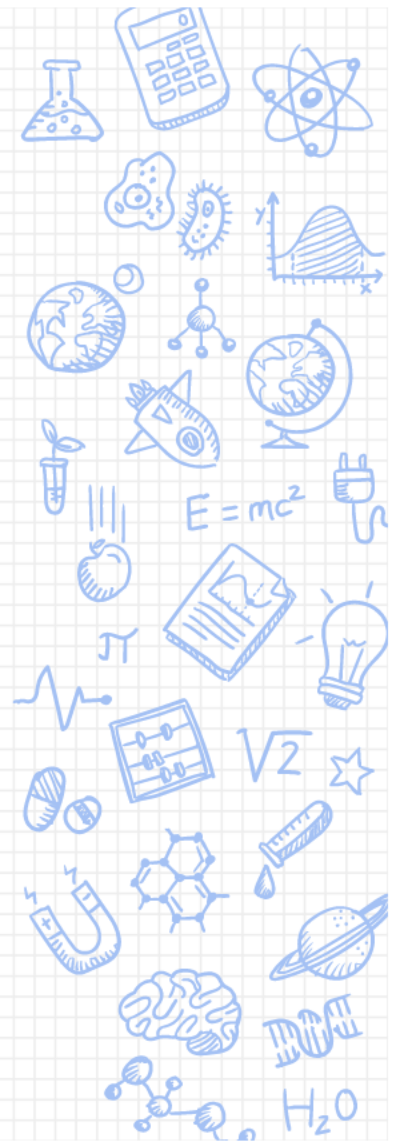
-Woman, 1st Year Student

“Ways I could improve myself in a team is be more involved and help build instead of just giving ideas on how to do things”

-Man, 1st Year Student

"I want to improve myself by being more involved in the team (I kind of sat back because I'm terrible about trying to make things like this)."

-Woman, 1st Year Student



Major Theme: Leadership Issues

“We were arguing almost the whole time about the best way to tackle the problem, everyone was trying to be a leader, and it ultimately led to a huge failure by our team.”

-Woman, 1st Year Student

“We initially argued about the structure, and then I was out voted and we kept going.”

-Woman, 1st Year Student

“We also had two people (in our group of 3) trying to lead the team, one of those people would be myself, and I wish I would have stopped talking and actually listened to the other person's ideas more.”

-Woman, 1st Year Student



Major Theme: Communication and Listening Skills

"If I could improve one aspect of my team skills, I would work on communication with my teammates so we would all be on the same page for the design."

-Man, 1st Year Student

"I think that sometimes I can get a little carried away and sometimes not listen to others as well as I should. I have a strong, out-going personality and am not shy with sharing my own ideas."

-Woman, 1st Year Student

“I want to improve myself in a team by incorporating more ideas that will better our future projects and have better communication skills with my group.”

-Woman, 1st Year Student



Conclusion

- ✗ STEM Students Are Able to Reflect on Effective Teamwork and Communication
- ✗ Reflective Writing Can Be Used to Qualitatively Gauge Initial Perceptions and Determine Themes
- ✗ Call for Action for Students to Be Taught Directly on How to Work Together in Activities and Labs
 - ✗ Monitor Involvement in Labs
 - ✗ Use Reflection to Assess if They Are Being Involved
 - ✗ Stress Importance of Teamwork and Communication in Laboratory Work



Conclusion cont.

- ✗ Challenging Team Based Activities Such as the Marshmallow Challenge Can Prompt Reflection
 - ✗ Can be Used as an Initial Lab to Stress Importance of Teamwork
- ✗ Reflection May Spur Behavior Change and Realization to Perform Better in Teams





THANKS!

Any questions?

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