

Student role adoption on teams:

How can we make it more equitable? How can we encourage students to take risks?



Faculty Communities for Inclusive Teaching, 2017

Robin Fowler, with Laura Alford, Laura Hirshfield, Joi-Lynn Mondisa, & Stephanie Sheffield

Project Overview

Students in Engineering 100 teams sometimes divide up work in gendered ways (research outside of our institution and course context suggests these patterns are not unique to UM or this course).

Initial planning meeting of Engin100 instructors

Gathered info to see if same thing happens in other sections

Brainstormed possible responses to it (e.g., assigning roles)

Met with student “informants” to gather info on how and why this might happen

2 meetings (different students, different faculty)

Similar insight from students

Met to brainstorm/discuss possible responses to task allocation challenges

Take home message: Students are too worried about grade

Need to encourage students to risk their own and others' grades by working outside of their comfort zones.

Key Insights / New Questions

Student teams divide work to their (perceived) strengths, due to (perceived) grade and time pressures

Can faculty intervene by affecting self-efficacy or perceptions of others' strengths? Can faculty reduce grade and time pressures?

Students report difficulty trusting teammates with work (sometimes based on experience with that particular teammate)... and therefore high performing students take on more of the work.

Can faculty somehow better capture individual work/effort, so that high performers with grade anxiety don't prevent others from doing work? Can faculty relieve high performers' grade anxiety in other ways?

Much of the issue is related to learning/performance goals

How can faculty encourage students to be high in learning goals and low in performance goals? Does the “competition” framing of some Engin100 sections work against this intent?

Students' perceived strengths might be a source of gender inequity

Can faculty intervene by giving students more background/training in areas of unequal experience? (We see this a lot with CAD modeling, where some students come with significant skills and others do not). We need to work on increasing self-efficacy...

Participants

Engineering 100 faculty and other interested CoE faculty/staff

- Ken Alfano
- Laura Alford
- Sarah Burcon
- Christian Casper
- Robin Fowler
- Lisa Grimble
- Elizabeth Hildinger
- Laura Hirshfield
- Rod Johnson
- Matt Johnson-Roberson
- Pauline Khan
- Joi-Lynn Mondisa
- MaryJane Northrup
- Leland Pierce
- Krista Quinn
- Stephanie Sheffield
- Rob Sulewski
- Fred Terry
- Elaine Wisniewski

14 upper division Engineering students (recruited from student project teams and from then-current instructional assistants for Engin100 courses).

Resources

CRLT has great resources on teams: an occasional paper, an inventory of research-based practices, etc.

- Beddoes, K., & Panther, G. (2017). Gender and teamwork: An analysis of professors' perspectives and practices. *European Journal of Engineering Education*,
- Felder, R., & Brent, R. (2016). *Teaching and Learning STEM: A Practical Guide*. San Francisco, CA: Jossey-Bass. (in particular, Chapter 11).
- Frederick, T. A. (2008). Facilitating better teamwork: Analyzing the challenges and strategies of classroom-based collaboration. *Business Communication Quarterly*, 71(4), 439-455.
- Linder, B., Somerville, M., Eris, O., & Tatar, N. (2010). Taking one for the team: Goal orientation and gender-correlated task division. *Frontiers in Education Conference*, Washington, D.C.
- Meadows, L. A., & Sekaquaptewa, D. (2013). The influence of gender stereotypes on role adoption on teams. *ASEE Annual Conference & Exposition*, Atlanta, GA.

Next Steps

Responses to this concern vary by section. Some of us are:

Asking students to reflect on their learning goals for the course, reminding students to consider these as they volunteer for tasks on team.

Assigning and rotating roles.

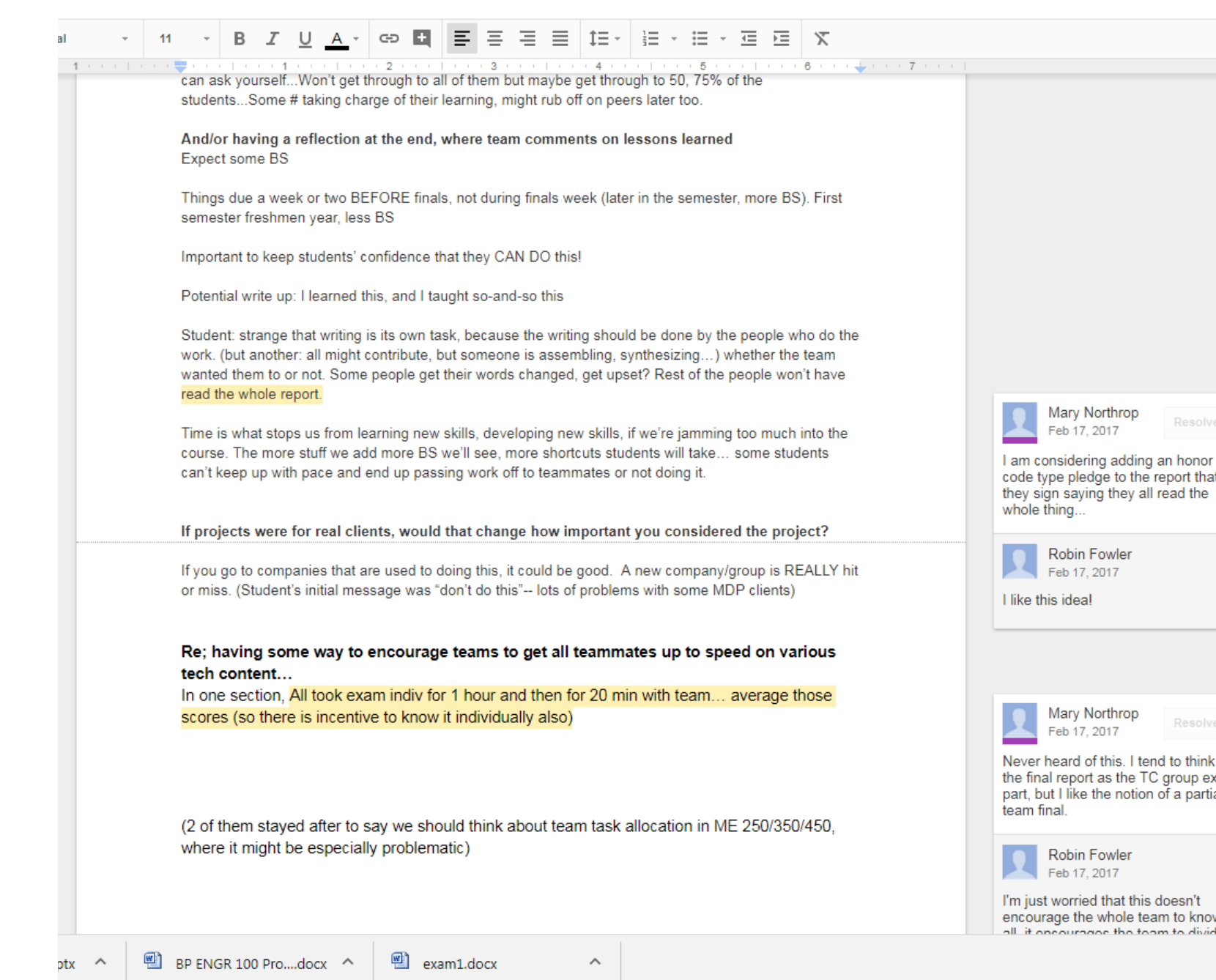
Decreasing grade pressure in various ways, or making grade pressure more individualized to decrease concerns of “risking another's grade.”

Checking in with teams more frequently and more systematically in hopes of catching and intervening on patterns earlier.

Working to increase student trust on teams in various ways.

Student participants were very encouraged to hear that faculty were concerned with this issue, requested that faculty in particular upper division team-based courses be made aware of our efforts.

Artifacts



Shared notes from the student meetings, in the form of Google Docs

Thank you for the opportunity/encouragement to think about this important topic!