Carnegie Mellon University

Difficult Conversations

WMSEE ‘25

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S3D
Software and Societal Systems Department

Context

17-313 Foundations of Software Engineering
~100-120 students a semester
~4 to 6 recitation sections
60% IS, 30% CS, 10% other
Teamwork is a first class learning objective
Teams of size 4-6
https://cmu-313.github.io/ -> Will share instructor repo if you send me your Github ID

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Course outline

14 weeks
First 10 days of the course a Project 1 (individual project to make sure everyone has setup and run the code base, currently NodeBB, OSS Project)
Team Formation
Project 2 -> Team formation, sprints, feature development (5 weeks)
Project 3 -> CI + Deployment (2 weeks)
Project 4 -> Architecture + ML (2 weeks)
Project 5 -> Open Source Excursion (3-4 weeks)

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Team Formation

We do not allow students to choose their own teams
We form teams internal to a recitation.
    Each recitation has 2 mentor TAs (each TA mentors 2 recitations)
    We have 3-4 teams per recitation
    We optimize for schedule availability
    We also consider students' demographics, program, JS/TS background, likelihood to drop (self reported)

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SIGCSE 24 paper with more details about surveys

Improving Software Engineering Teamwork with Structured Feedback

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ABSTRACT

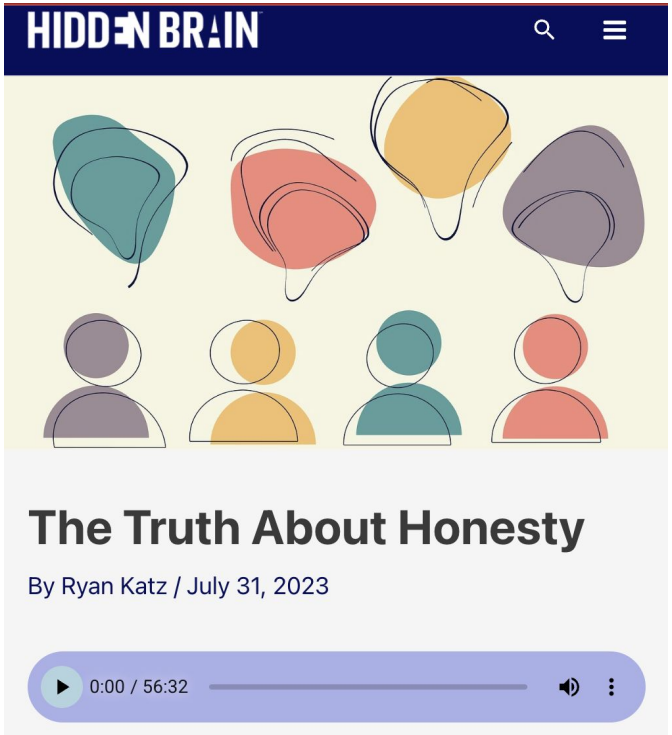
Teamwork is a key learning outcome for our course, Foundations of Software Engineering. However, conflicts are inevitable in teams, and if students cannot resolve conflicts, this can lead to decreased satisfaction for everyone on the team. In this experience report, we present our approach to help students deal with conflicts that can occur in team projects. Working with faculty from the School of Business, following best practices of organizational behaviour research, we instructed students on how to provide high quality peer feedback, and designed activities where students provided feedback to each other following these principles. After this intervention, we compared the results of our teamwork survey with the results from

unresolved, they can be detrimental to the success of software development projects, and lead to lower developer satisfaction in the team. [3, 11, 17].

In a third year course on software engineering, Foundations of Software Engineering (17-313), students collaborate in teams of 4 to 6 members, working on various projects through the semester. A major recurring challenge is that a portion of student teams struggle to work together. Despite trying various methods to help teams address teamwork issues over the years, the student teams continued to struggle.

"Conflicts with team members" was continuously reported as the largest concern that students had in the class. Moreover, members of such teams tended to report lower satisfaction with the course

Taya Cohen - Professor of Organizational Behavior and Business Ethics



Module

Week 2 - Form teams
Week 3 - Lecture on “Teams and Communication”
Week 10 - Module on difficult conversations

Module:

- Lecture from Expert, in class activity
- Team Feedback Survey
- Recitation (lab section) to discuss feedback
- Question on midterm to assess

Difficult Conversation Examples:

Example of difficult conversations:

1. Team member misunderstands requirements

2. Team member isn’t submitting work on time.

Avoid “compliment sandwich”

Template

Your script:

Step	What you might say
00. OPTIONAL: Use a starter phrase	
01. Describe situation and behaviors	
02. Explain the impact on shared group goals and values	
03. Communicate respect and curiosity for others' perspective	
04. Jointly identify a path forward	

Step	Scenario 1	Scenario 2
00. OPTIONAL: Use a starter phrase	The reason for this conversation is to discuss challenges with communication in our team.	
01. Describe situation and behaviors	Last week team members sent you multiple messages asking for information and several are still waiting for responses.	Our current plans and milestones include feature X.
02. Explain the impact on shared group goals and values	Not responding promptly impacts our team's ability to move forward on other parts of the project, which is putting us behind schedule, and could ultimately result in a failed project.	I'm concerned that this feature adds a lot of complexity, which could ultimately distract us from doing a good job on the mandatory features described in the specifications document.
03. Communicate respect and curiosity for others' perspective	You may not have realized how much our team depends on your expertise in answering these questions.	I understand why we might want to include it, though I'd love to hear more.
04. Jointly identify a path forward	What would make it easier for you to give timely answers to our questions?	Could we return to our specifications document, review the goals we have for the project, and discuss the potential benefits versus risks of including feature X?

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Teach your students to work together!