

Mechanics VCP Session 5 (May 2, 2013)

Breakout Session and Chat Notes

Breakout Session 1: What types of short-term collaborative learning do you do?

Group 1

- Christine: Informal discussion: how to solve a problem, etc.; no formal group work; might try something durizzng discussion sessions
- Mousa: Selects team members one quarter, then students allowed to choose team members another quarter (works better). Example: build a concrete beam and test them after estimating strength and compare results. Identifies tasks, and allows students to select/decide on roles.
- Peer Evaluation - 20% of their grade; successful - students usually evaluate carefully.
- Matthew: some in-class problem solving, and present at the end. Shows the rubric for grading for peer evaluation.
- Amelito: Create a review manual for a test; create a sample test; exchange sample tests
- For long-term projects, selection of group members more important
- Christine thinks that random selection of groups is more critical.
- More difficulty to do in-class group activities for large courses.
- Christine: Electric toothbrush, testing to see if they can come up with suggested improvement. It take extra resources.
- I a smaller class they would analyze a universal hinge for different types of stress, this wa a semester long
- Obstacle: shea
- Mathew: Senior design class, they can do alone or two Group students to submit a final report on their calculations and CAD drawings. Obstacle was the level of activity and contribution.
- Enriquesz: Bridge project made of balsa wook to be tested by sand bags or by testing machine. Another one was to test a exercise machine to suggest improvements. The obstacle was coordinating the time of participants. I allow them to choose their teammates.
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Group 2

- CY: Project-based, but semester long. Roles are not assigned.
- Carisa: Large lectures -- adding few discussions.
- Ed Davis: no projects. Team activities by day -- random groups to work problems in class. Percentage of grade can come from team effort. Upper

level classes have roles explained, but teams are allowed to shuffle into the roles.

- Rick: Peer instruction, think-pair-share. Upper classes have lab reports in groups. Teams have 10 points and students can distribute them amongst the team, sometimes contribution or performance and sometimes by effort. Teams are set up so that performance minimizes opportunities to ride on other people's coat tails.
- Anna: groups of 3, assigned. Teams are reshuffled four times over the semester. Not graded, not peer evaluated at all. Roles: skeptic, manager, recorder. Students can be jostled into participating, but when assignments are not graded there is no need for peer assessment. Bonus points for teams that average 70 or more on the exam. Teams are set so one is a high performer, one is a poor performer, and one is in between.

Group 3

- In upper level classes, assigns team work; doesn't assign roles or groups; part of the grade is based on team member assessments.
- In general, not much collaborative work in the mechanics classrooms; one of us gives "group quizzes" which seem to work best with assigned teams.
- In dynamics, students work together on longer problems, but not graded.
- Since most of us don't do short-term team work, we discussed how to make time to do teamwork in class by using videos and assignments outside of class; the main constraint is time.

Breakout Session 2: What types of projects have you done in class?

Group 1

- 8 different teams of 4 students to build a brick column
 - test strength of bricks
 - test strength of the mortar
 - design a column and estimate the strength
 - test
- Winning team gets \$1000

Group 2

- Types of projects: rocket design and test, trusses design and simulate, design and build composite skateboard, computer numerical simulation projects (alt energy, mass-spring-dampers, amusement park rides, double pendulum), water-balloon launcher
 - primarily group projects

- Obstacles: students struggle with transferring the technical knowledge to the project - making realistic assumptions/simplifications, time intensive - displaces other instructional time
- Strategies: tell them what assumptions to make or provide more individual instruction/meetings to provide feedback and steering/hints

Group 3

- Beam project and bolted connection - obstacles - needing to use machine shop for bolted connection - access to testing machine
- Competition tends to motivate students
- Would be beneficial to have a discussion to assess the results - could be done via a short reflection
- Allowing time to do reflection - students appreciated it
- Ways to get students involved other than because its for a grade? Varies by student - competition helps

Chat Window Activity

Anna Howard: Fascinating explanation of a team-test from a guy who taught game theory: <http://blogs.kcrw.com/whichwayla/2013/04/cheating-to-learn-how-a-ucla-professor-gamed-a-game-theory-midterm>