

In-class assessment using  
Turning Point for  
Mech 341 (Thermodynamics II)  
and  
Mech 430 (Fluid Mechanics II)

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# Rationale

- Attendance leaves something to be desired.
- Many students who do attend do not use the lecture time effectively.

# What was developed:

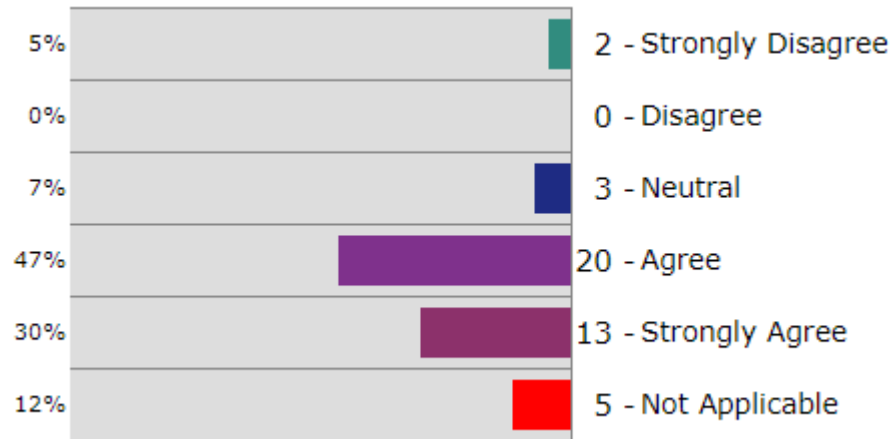
- Polling sessions for Mech 430 and Mech 341
- Each session consists of 5-8 questions of various type: multiple choice, true/false, etc.
- Roughly 1 session per course chapter (~10 per course)

# Implementation

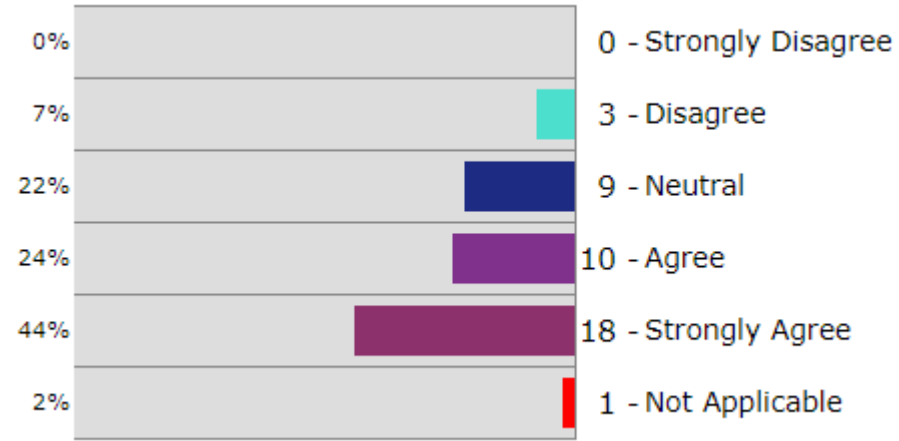
- 4 terms so far: Winter 2017, Fall 2017, Winter 2018, Fall 2018
- About 10 polling sessions (one per week, except midterm weeks)
- The schedule is not known in advance (even to the instructor 😊)
- 4-8 questions per polling session
- Students are allowed to discuss the answers with each other during the allocated time.
- Incorporated in the grading scheme as 5% bonus (on top of 100%). For each session 1 point is given for participation and other points – for correct answers.

# Students' feedback via course evaluations

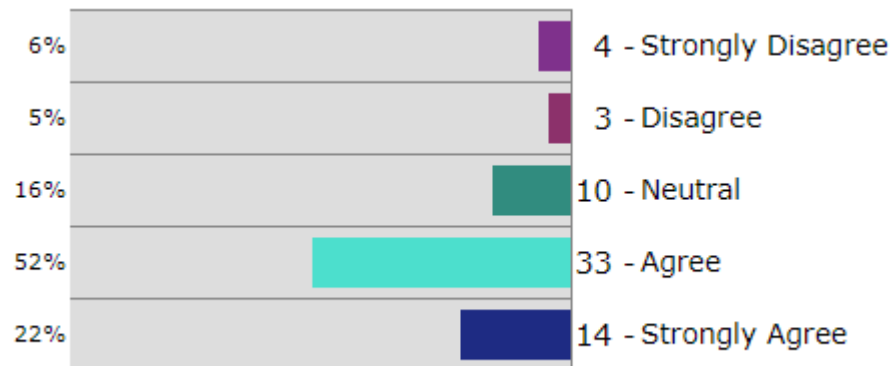
**Question 28** - Using a web-based polling system (TurningPoint) in class had a positive impact on my learning, and its usage should be encouraged and extended. If possible, please elaborate in the comment section.



Winter 2018,  
response rate 76.5%



Fall 2017,  
response rate 77.3%



Winter 2017,  
response rate 63.5%

# Students' comments

## Praising remarks:

- Great way to both take attendance but also check where we are at in the learning process. I enjoyed those quizzes
- Great manner to digest material that is taught, to understand key concepts.
- I liked the turning point questions as they got you to focus on the overall concept more. Sometimes I find that you get lost in equations in some courses, and these were a good way to check general understanding.
- The TurningPoint questions were an EXTREMELY beneficial tool in class, because it cemented the knowledge from that day by making me actually think through the notes I wrote, and also because when the class clearly didn't understand a topic, we were able to gauge it on the day of and ask clarifying questions.
- Polling system was effective in teaching, I think it was used just the right amount. It's a stress free way for obtaining live feedback on the topics one has learned throughout the course.

# Students' comments

## Critical remarks:

- “I liked the questions but I felt that it would have been better to have more time to respond”.  
“...maybe allow for a discussion period with peers before submitting answers.”  
*Resolution: timing was slightly increased (also to allow more time for students's discussions) . Note, there is also an opposite opinion: “I would have preferred to have more shorter quizzes as I feel like we only had around 3 and they took up a good chunk of the class time.”*
- “It would be good to have the answers to the polling sessions with a description on mycourses.”  
*Resolution: impossible but an alternative and much more extensive set of questions has Been developed for MyCourses.*
- “It seemed a good initiative but for me not having a smartphone or laptop, I wasn't able to participate and benefit of the extra credit placing me at a disadvantage.”

*Resolution: ????*

# Students' comments

Critical remarks:

- “Since attendance is not mandatory, and all course material is provided (which is great) this penalizes students who prefer book learning and who learn best on their own rhythm. I like the concept, but I'm not sure if it should be for marks, more as a tool for students to evaluate themselves (see where they are in their knowledge).”

*Resolution: Quizzes on MyCourses for such students have been created (MECH 430)*

- “Should probably be said in advance when TurningPoint will be used. “

*Resolution: no – defies the purpose.*

- “I think asking a couple questions at the start or end of class often, rather than only a few longer sessions is the most beneficial”

*Resolution: not sure... not time-efficient*

- “I wish we would have spent more time explaining the answers. Especially those for which the answers were not obvious for a big part of the class.”

*Resolution: I provide more detailed explanations now.*



# Conclusion

- The undertaking was certainly worthwhile:
  - > better attendance
  - > better grades
  - > perhaps, better interest in the course (better evaluations)
- The content is being polished, improved, fine-tuned and extended
- MyCourses version for home use (“Quizzes”) has just been created and is being tested.