# Reflection on Teaching

A Presentation by Daniel A. Moreno

ME 7757 Teaching Practicum

29 November 2018

### Introduction – Reflection on Teaching

- Course Taught: ME 3322 Thermodynamics
- Relevant Tasks:
  - Taught on Introduction to Entropy
  - Taught on Rankine (Power) Cycles
  - Taught on Special Topics in Refrigeration (custom lecture)
  - Proctored Exams
  - Office Hours for Students

But there's so much more...

# The Impact of Teaching

Is teaching really just a chore/obligation? *Why?* 

Real motivations for teaching:

- Service (contributing to a cause I care about)
- Development (new skills/knowledge)
- Entertainment (it's fun!)

# Teaching as Service

- Put the students first!!!
- The goal is to *teach* introduce and develop understanding of material to students
  - Not just to deliver/present a lecture
- Humility:
  - I am not perfect.
  - I do not expect the students to be perfect.
- The class should *matter*:
  - How can I show this in a way that non-human sources (book, website) can't?
  - How can I leave new ways of showing this that others have not yet developed?

# Teaching as Development

- Technical skills
  - Knowledge (ME 3322: Entropy, Power Generation, Refrigeration)
  - Hardware (ME 4056: Flow visualization, temperature measurement)
  - Software (ME 2110: LabVIEW, Advanced Excel functions)
- Non-technical skills
  - Student connectivity
  - Management/organization
  - In-depth detailed planning
  - Clarity/direction in communication
- Usefulness of different tools
  - Hand-written (for students to follow along and take notes)
  - Presentation Slides (to quickly convey information with more detail)
  - Example Problems (to provide direct application reference for review)

#### \*\*\* Professionalism!

## Teaching as Entertainment

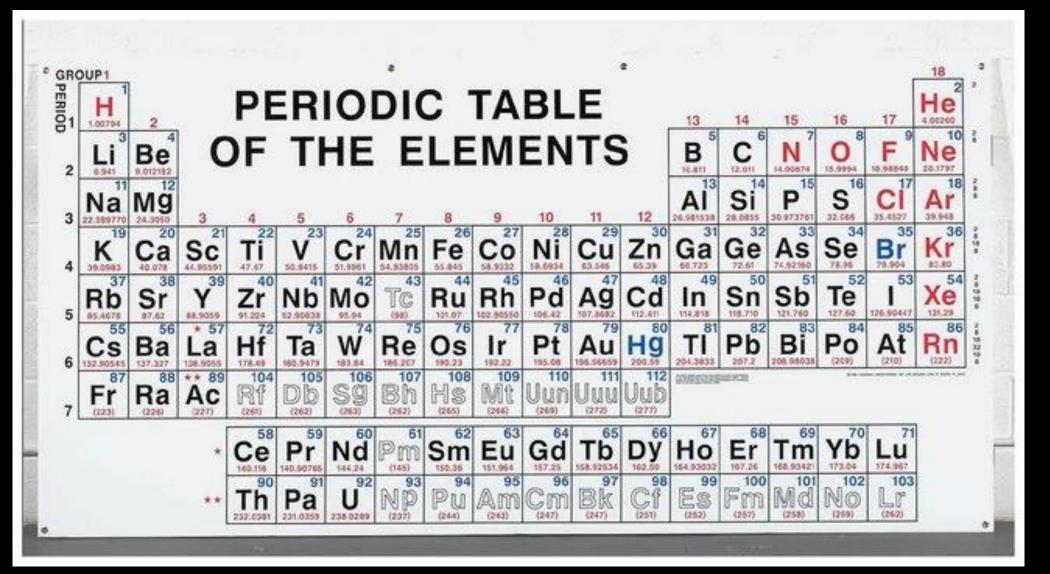
- Classes can be challenging for all, why not have some fun with it?!?
- Outcomes:
  - Relieve stress/tension with students
  - Make the students want to come to class
  - Keep students engaged/focused during the class
  - Be unpredictable!
- Personal goals:
  - Make students laugh at least once a lecture
  - Admit to own interests/curiosity at least once a lecture
  - Connect to current culture/climate, as appropriate

#### Examples - Thermoelectrics



http://salestores.com/koolatronkcc.html#.W\_4wbhKiM8

#### Examples – A familiar classroom appearance...



## Conclusion

Key findings: An incredible range of opportunities naturally provided through teaching objectives.

- Value for self as well as for others
- Break the "barriers" of teaching and learning
- Assist from past experiences

But most importantly....

A motivation to keep going, persevere, and overcome new challenges.

#### Questions?