Circle time: mixing up active learning activities

Steve Yalisove and Alex Sarracino
Materials Science and Engineering
Applied Physics

Problem

- How do we escape the boredom of peer instruction activities
- How do we drive inclusion?
- How do we write really open ended problems that work for learning

Example modeling questions (see handout)

- Magic scissors
- Families of planes
- What kind of crystal structure is perovskites
- Predicting the results of a demo
- Developing a model from experimental data
- How would you have saved this company?

Summary

- Students get a deep learning experience
- Inclusion is easy
- Whiteboards provide an excellent drawing opportunity
- Communication skills are enhanced

Approach

- Use the modeling approach developed by Laird Kramer in the physics department at Florida International University
- Develop modeling questions that are open ended yet can be completed in 10 to 20 minutes.
- Buy 4x8 foot sheets of melanine paneling and have them cut into six 2x3 foot whiteboards. Five sheets gave us 30 boards for just $50.00.
- Break students into groups of two or three

Practical Issues

- You need a lot of space
- You need a lot of time
  - Choose problems that incorporate several concepts
  - Remove recitation and lecture to buy time
  - Use an appropriate replacement for the first introduction of the material
- You need excellent instructional aides and you need to work with them

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