

# Demonstrations and Modeling in the Science Classroom

Justin B. and Nader M.

Cohort #7

"Teacher Copy"

## Overview of Papers

- Milne, C & Otieno, T. (2005). Paperclips + Polymers \_ Problems: Learning to use levels of representation in a high school chemistry classroom, In K., Tobin, R. Elmesky, & G. Sailer, (Eds). (pp. 213-230). Improving urban science education: new roles for teachers, students, and researchers. New York: Rowman & Littlefield Publishers, Inc.
- Milne, C & Otieno, T. (under review). Understanding engagement: the transformative power of science demonstrations

## Demonstrations

- Class questions (Nader)
  - How effective are demonstrations in your classroom?
  - To have a successful demo. Do your students need to have prior experience?
  - Do you demonstrate a topic first or explain the concept and then demonstrate?
- Inverted Cup Demonstration (Nader)
  - What happened to the paper in the cup?
  - What prevented the paper from being wet?
  - Can two things take up the same space?
  - What would happen if there was a hole in the cup?
- Crushing Can Demonstration (Justin)
  - What happened to the can?
  - Describe the physical properties of the gases in the can before it was inverted.
  - Why did the can crush?
- Egg in Flask Demonstration (If time...)

## Class Questions on Demonstrations Paper

- (Nader Here)
- Does demonstration help your students to get engaged in classroom?
- Observing involves students relating current experience to previous experiences and using new language to make connections between the two.
- In Science classroom very often positive emotional energy can be associated with a rare alignment of teacher goals (student involvement and learning) and student's goals (gaining respect and studying an interesting area).
- Demonstration as a shared experience ( demo provides basis for discussion about what happened)