

Teaching Seminar - Week 3

Assessing Student Understanding:

- Be wary of student reactions and facial expressions in order to gauge confusion and/or frustration
- Be able to move fluidly between specific problem-oriented questions from students and the conceptual misunderstanding (general vs. specific questions)
- When doing problems at the board try asking students for help or input; be able to handle mistakes at the board by you or students
- Have intimate knowledge of the homework and any examples you bring to discussion so that you can help students see the concepts at play (ask class leading questions or questions that will help the class formulate a question for you, so that you're not just solving problems)
- Establishing familiarity and mutual trust with students (via names etc.) should help students feel comfortable communicating questions and frustrations
- Try collecting something ("quiz" or something) to assess understanding even if the professor doesn't require it
- Activities to try with students ("Let's think like a teacher!"):
 1. Ask students, "What would you put on the exam?" ...let students generate quiz/exam questions
 2. Bring solved problems or old exams in for students to grade themselves
- Be the "biggest person in the room" (having presence, being loud, clear, well-spoken, organized, prepared, making use of valuable time) will help you earn respect and be treated as the authority. After you've set this tone you can then take on whatever personality is natural for you.
- Instead of always solving examples, try outlining the steps needed to solve a problem or outlining the chapter you've been working on. Give students an opportunity to help create this outline.
- When it comes to questions in general, keep the big picture in mind and try to reinforce this when answering questions. Emphasize concepts as opposed to isolated per-question solutions.

Lessons from Today:

- Learn students' names. Ask every person who participates, comes to office hours, or speaks to you after class to remind you of their name. Then repeat their name and use it to address them.
- When students say they have no more questions:
 1. Ask them to work independently on a new question for a few minutes then let them talk to their classmates for a few minutes. Collect their work and look it over before the next discussion.
 2. Ask students to write out in words a description of the concepts you've been working on (e.g. What is meant by "the derivative of a function at a point? How many different explanations can you give?"). Or ask students to look over a problem you just solved and now outline the steps that were involved. Then let students share/compare their lists.
- Have students work problems at the board. Instead of randomly calling on people (potentially embarrassing), ask for a volunteer who can do at least one step. Tell them that if at any point they get stuck (or bored), they can just "pass the chalk" to someone else who knows what comes next.
- Elaborate on HW problems. Address underlying concepts. Give opportunities to compare and contrast different types of problems.