

Effective Recitations: Helping Your Students Learn

Supplement: Small/Unstructured Classes

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Objectives:

- Develop strategies for teaching to small, diverse groups
- Practice & devise active learning strategies for recitations

You already be figuring this out for yourselves, but Caltech is far more informal and flexible than most universities. This attitude extends into the classroom, particularly in smaller graduate or upper-level undergraduate courses, where the course time, structure, and even content are open to input from the students. Being a TA in these classes is challenging -- the problem sets may not have answer keys, the professor may decide what material to cover on a whim -- but you have the flexibility to be thoughtful and creative, and the experience can be a far more rewarding than following a formulaic lesson plan.

All of the general strategies in the online materials apply to these classroom settings, but there are some that are especially important here:

1. Go to lecture
 - a. There is no better way to make sure you are able to identify students' concerns and difficulties with the material
 - b. If you aren't able to make it for some reason, it is okay to ask a student for (legible) notes, or to talk to the professor about what was covered
2. Gathering feedback:
 - a. Gather feedback in person or electronically, but do it often. Especially as a new TA
 - b. Ex: Send out [weekly surveys](#) on the lectures and homework. Google Forms provides an easy and flexible format for this.
3. Communicating with the Professor
 - a. Often the professor for a course may be your advisor, which may (or may not) make it easier to communicate regarding the class. If not, it is helpful to meet weekly, or perhaps biweekly to discuss the Prof's plans for lecture, exams, homework, etc.
 - b. You can serve as a go-between for the students. Solicit their feedback on concerns/struggles, and make sure the professor is aware of that.
4. Transparency
 - a. If you don't know an answer to a question, which may certainly be the case for advanced electives/grad classes, be honest
 - b. Be transparent (but professional!) regarding course administration. For example:

- i. It is okay to say that you don't know what the professor's plans for the exam/project are, or that you don't have an answer key for the assignment.
 - ii. It is not okay to disclose that the professor is unhappy with the students' pace of learning
5. Teaching to variety of backgrounds
 - a. This will be especially important for graduate students, who will all have different backgrounds and levels of familiarity with particular fundamental concepts
 - b. You will have to find the right pace for your class. Often there will be 1 or 2 students who need extra help (which you can give at your discretion outside of recitation/lecture) and 1 or 2 who are bored. This is why gathering feedback is important -- the majority of the class should be okay with the pace of material
6. Set boundaries: In a small classroom it can be easily to feel personally responsible for the students' success, but it is not all on you. You have to decide what is best for you.
 - a. Draft an email, or set aside a few minutes on the first day, to discuss your philosophy on your role as a TA
 - i. Ex: Say at the beginning "I won't answer emails on the weekend or after 9 pm"
 - ii. Ex: End your recitations on time and tell the students to schedule a meeting with you or come to office hours with additional questions.

Small/more intimate classrooms enable you to more easily track conceptual difficulties, and let you more easily implement and adapt some active learning strategies. Active strategies may not always be appropriate, sometimes stand-up lectures are necessary for the sake of time, etc, but here are some alternatives/supplements:

- Problem-based learning
 - Develop/find short problems to do as a class or in small groups
 - If more extensive problems are appropriate - email the problem ahead of time and ask the students to work before coming to class.
- Concept questions
 - Develop/find short questions that test students' ability to apply broader concepts
 - e.g. using symmetry/linearity arguments to solve a physics problem
- Think-pair-share
 - Ask students to discuss the answer or work the problem in small groups, and then present their answer and reasoning.
 - You could have each group answering different questions and then teaching the rest of the class
- Connecting course concepts to current events
- In-class "minute" papers (short essays)

The overarching idea is: **don't just regurgitate lecture material or tell them how to do the homework.** Using active strategies will require more in-class time and more preparation on your part, but it is certainly worthwhile in terms of improving student learning:

- “Analysis of the research literature (Chickering and Gamson 1987), however, suggests that students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation.”

- Bonwell, C. & Eison, J. (1991). Active Learning: Creating Excitement in the Classroom, *ERIC Clearinghouse on Higher Education*, Washington, D.C. <http://ericae.net/db/edo/ED340272.htm>

- Reference on active learning and its benefits:
<https://www.cte.cornell.edu/documents/presentations/Active%20Learning%20-%20Creating%20Excitement%20in%20the%20Classroom%20-%20Handout.pdf>