Teaching a Science or Discussion Lab:
How to distill what is important from lectures, design and run activities, and facilitate discussion

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A recent study shows that students taught by TAs scored higher than students who attended traditional lectures by experienced and well-rated professors.

YES WE CAN! but what is the secret here? Interactive, collaborative and application-oriented problem-solving approach
Lectures

Function as a conceptual source of information for students and expose students to a large, basic body of the science information.

Labs

Are usually in a smaller group settings and therefore provide

- An opportunity to perform application-oriented problem-solving tasks
- An interactive and collaborative environments
- In conclusion - more challenging but arguably a better learning environment.
How to Conduct a Science Lab? - PIE

**Plan**
- Get familiar with the material, methods, tools, safety rules and first aid kits
- Perform the experiment and related tasks
- Make sure all you need are ready – handouts, equipments, supplies

**Implement**
- Run the lab
- Work with students

**Evaluate**
- Student response and feedbacks (individual or group), surveys
Day 1

- Introduction - Know your students
  (a tip: ask something unique about them)

- Overview of the labs
  Describe work loads, nature of labs (eg. computer programming, field trips, group works), due dates, exams, grading etc.

- Introduce the lab, necessary tools, and technology you are planning to use (Eg., Laulima)

- Spell out the ground rules
  Let students know what is acceptable and what is not
General Tips and my Experiences (2 of 3)

General Advice

→ Prepare materials (photocopies, overheads, slides) in advance
→ Solve exams and homeworks before you give it to students
→ If you are TAing a lab and lecture is taught by a professor, make sure you know what is being covered in the lecture
→ Be available when your students need help particularly during the exam time
→ Know your students’ special needs if there is any.
→ Try to maintain your schedule and time
→ If you are coming from other countries with your own experience – make sure your experience is relevant before you apply (eg., where I come from, food and drinks are not allowed in the classroom)
Grading

→ Grading is one of the most important job
Make sure you are being fair to everybody (a tip: use objective questions when possible)

→ If there are many lab sessions taught by different TAs, make sure grading is done consistently

→ Prepare for the conflicting situation
Enjoy TAing!