



Caltech

2020
Teaching
Conference

Effective Recitations

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Session Outline

- What are recitation sessions at Caltech?
- How to host awesome recitation sessions
- What NOT to do in a recitation session
- Planning your session
- How to design effective problems for your session



Learning Outcomes

You will learn:

- how to make the material come alive.
- what to do before and after the lecture
- how to help your students get the most out of the lecture.
- how to select topics and problems for your recitation.





What does a
recitation involve?

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How to host
awesome recitation
sessions?

How to host
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- How to make the material come alive?

How to host
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sessions?

- How to make the material come alive?
- Go for active over static
$$\vec{A} \cdot \vec{B} = a_1 b_1 + a_2 b_2 + \dots + a_n b_n$$
- Use GIFs, Youtube, Wolfram, etc.


How to host
awesome recitation
sessions?

- What to do after the lecture?
- The autopsy
- Maintain a notebook

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How to host awesome recitation sessions?

- How to help your students get the most out of the lecture?
- Coursemap ?

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What NOT to do
in a recitation
session?

The Unforgiveable Curses

What NOT to do
in a recitation
session?

- Clearly

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- Obviously

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- Trivially

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Warning! Watch out for “expert amnesia”
you are relative experts

Planning your Session

Learning Objectives

- What gap in knowledge must the students overcome to effectively understand the material?
- What skills must the students practice to effectively attempt their assignments?
- How would you best achieve the above?
 - Lecture, group discussion, group activities, etc.

Planning your Session

As an effective TA, you need to focus on:

- Clarifying concepts and terminology
- Providing context to the material being discussed
- Confirm their confidence!

Planning your Session

Plan and Rehearse

- Do the homework
- Prepare more problems/examples than you need
- Write out your plan and rehearse it

Planning your
Session – Effective
Problem Solving

- *Think of a time you were given a particularly challenging problem with a rewarding solution. What made that problem memorable?*

Planning your Session – Effective Problem Solving

- **Makes the concepts more tangible**
- Can also provides avenues to **challenge students who want to delve deeper** into the material
- **Know your audience** – relate the material to things the students care about
- Funny and interesting problem statements have more sticking power
- Good problems emphasize key concepts with different perspectives
- Try to avoid problems that are exactly the same as the homework but with different numbers

Planning your Session – Effective Problem Solving

- *There are many resources for problems/examples that already exist:*
 - *Discuss with your co-instructors or previous instructors*
 - *May reuse problems from previous years' recitations, problem sets or exams*
 - *Look for other examples in textbooks or even online*
 - *Consider inspiration from your own area of research*

Some Final Tips

- Think Pair Share
- Enjoy the Pause!
- Walk through solutions and avoid skipping steps when possible
- Plan, Rehearse and Repeat!
- Be Authentic!

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Next Steps

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- Please visit <https://teach.caltech.edu> for more resources on teaching remotely
- Visit <https://learn.caltech.edu> for more resources on learning remotely