

Effective Lecturing: developing a mini-lecture (Twelve Tips)



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Formats of Lectures



- Elevator Talk (1-5 min; ~1-3 slides)
- Mini-lecture (15-20 min; variable up to 10 slides)
- Formal lecture (45-50 min; variable, usually 25-75 slides)
- Modern lecture (30-75 min; variable, multimedia embedded, activities)

My Teaching Background (mainly as a researcher)



1984-1993

1994-2014

2014-2017

Tip#1 Have Great mentors

- Your mentors will guide you on what you need, even if you do not think you will need them



Martin Rodbell



Masahiko Negishi



Phil Skolnick

Tip#2 Be yourself: students are very perceptive

- Students know your mood
- Be yourself, it is the most authentic version of the teacher you are.



Helen Keller

World not seen or touched, but felt with the heart.



Aristotle

Greek philosopher, physics, metaphysics, poetry, theatre, music, logic, rhetoric, politics, biology and zoology.

Tip#3 You will be asked to lecture material outside of your expertise

- The body of knowledge in academia is vast
- Your best asset is your curiosity
- You can do it



Tip#4 Students are very forgiving of your mistakes in lecture

- If you get something wrong, you can always correct it (e.g. in the next class).....
- If you feel something is wrong, it probably is.....
- You will get better, but it takes time and effort



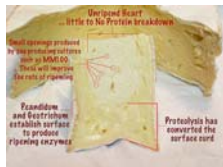
Tip#5 Teaching/lecturing is about learning

- You have not taught unless the student has learned
- Teach an amount and level of content that can be learned
- Be flexible in your content, teaching approaches, do what works



Tip#6 Content: Less is Better

- Less content is better
- Focus on key points, go for quality
- Preparing less content takes more time
- Typical student feedback – content is too much/ too fast



Tip#7 Mix it up

- Use multi-media (videos, surveys, demos)
- Use pauses and breaks
- Flip-it



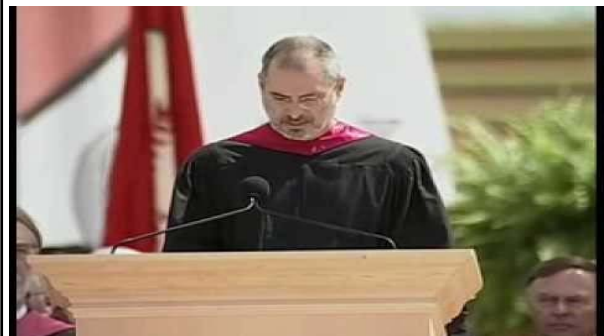
What is white, milk and dark chocolate ?

<https://www.youtube.com/watch?v=VtSGiaf8tIs>

pollev.com/garrywong



Great example of a mini-lecture



Tip#8 See it from the student's point of view

- Who is your audience ?
- Watch your use of jargon and field specific concepts.
- Time of day matters – morning, afternoon, evening class.



Tip#9 See it from your own point of view

- Tape yourself – do I really sound like that ?
- Be your own critic
- Develop your style as a lecturer



Tip#10 Take time off after the semester

- Your experiments will wait
- Everyone needs to recharge
- You need to reflect



Tip#11 You will never have enough time for teaching preparation

- Manage well your time.
- Prioritize your projects.
- Have discipline.
- Practice when necessary.
- Repetition makes the master.
- Have a template (1/3 review and discussion, 1/3 lecture, 1/3 activity).

Tip#12 With great power comes great responsibility

- You hope to be a positive influence on a student's life as their teacher.
- A student may remember you for decades.
- Can you inspire their desire to learn ?
- Can you give them something that lasts ?



Voltaire



Spiderman

Summary and Conclusions

- You now have 12 tips on teaching + 12 tips for preparing lectures
- Applicable for mini-lecture as well as regular lecture
- Both teaching and research demand time and attention, yet both can be rewarding
- You can always improve your lectures and teaching

Thanks for your attention !

