Interactive Teaching and Learning
Ideas for Engaging Students

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Interactive teaching engages students and guides them in making sense of, assimilating, and using information. Its emphasis extends beyond pure transfer of facts and ideas.

**Session Objectives**

By briefly becoming the students of 4 different teachers, and discussing these experiences, participants will:

1. Reflect on how *they* learned something ‘academic’ that they have become really good at
2. Consider ways that various interactive approaches may engage students and help them learn
3. Identify specific ideas or techniques that they might apply in their own teaching to engage students
Learning and memory require active brain work

Students aren’t dry sponges
Little learning occurs by passive absorption of facts and ideas

To learn, each student must
Take in information
Connect it with other information
Interpret it
Rehearse it
Use it

Effective teaching involves guiding and facilitating this process
That’s what Engaging Students by Interactive Teaching is all about
Think about something ‘academic’ that you are now pretty good at doing.

How did you learn it?
Think about something ‘academic’ that you are now pretty good at doing.

How did you learn it?

_Here’s my list… prioritize these items for yourself_
Hearing about it in a lecture from an expert
Reviewing it with your teacher
Reading about it
Discussing it with colleagues
Practicing it in real-life settings
Being tested on it - with feedback
Students describe some effective class sessions

‘… there was a chance to interact, ask questions, and spend the time engaged in the material’

‘I gained something unique from the experience as I learned material in a way I could not have on my own’

‘Information was presented in a way that made it easier for me to later learn more about it (and helped me remember it)’
Interactive teaching that engages students

Helps teachers figure out what’s going on in their students’ brains

Provides students initial access to difficult material that might otherwise be overwhelming

Motivates students by providing pertinent, real-life problems to solve, with immediate feedback

Turns each student into a teacher -- learning by explaining ideas and arguing points

*Now 4 snapshots - after each we’ll take a minute so you can jot down notes on ideas that might be helpful for your own teaching. Or your own related approaches that work well.*
Key points
Less is more
Simple slides
Videos are worth 1,000 words
Distill the essence
Make interesting/decompress
Make accessible/comprehensible
relevance/reinforce
TEACHING WITH EXPERIMENTS

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Regulation of thymocyte maturation

CD4-8- → CD4+8+ → CD4+ → CD8+
CD4/CD8 Thymocyte subsets

How is this regulated?
Regulation of T cell development

- Are CD4 and CD8 expression tied to TCR gene rearrangements and/or TCR protein expression, or vice-versa?

- Analyze T cell development in TCR alpha or TCR beta chain knockout mice...
Thymocytes from TCR $\alpha$ or TCR $\beta$ KO mice
(idealized data...)

WT

TCR$\beta$-/-

TCR$\alpha$-/-

CD4

CD8

CD4

CD8

CD4

CD8
The Real Data

WT     TCR\(\alpha\)-/-     TCR\(\beta\)-/-     TCR\(\alpha\)-/- TCR\(\beta\)-/-

10^8     10^8     <10^7     <10^7

Expressing TCR\(\gamma\delta\)

Small Group Teaching

Our SOM Students Said:

1. Set ground rules and expectations
2. Tell students to be prepared to participate and to respect each other
3. Maintain a friendly, non-intimidating environment
4. Allow time for students to answer questions
5. Share experiences where appropriate
6. Pay attention to time
7. Be aware of your own mood
8. Learn about the students, as prior experiences, etc.
9. Remember what it was like to be in their position

Excellent Websites for Small Group Teaching Skills

- http://www.faculty.londondeanery.ac.uk/e-learning/small-group-teaching/further_view
- http://medschool.creighton.edu/fileadmin/user/medicine/images/OME_staff/OME_Pics/For_Faculty/BMF_Small_Groups.pdf
- http://www.bmj.com/content/326/7387/492.1
- http://www.learning.ox.ac.uk/support/teaching/resources/group/
- http://www.celt.iastate.edu/teaching/small_group.html
- http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1125068/