

## DR. SCHWENK'S TIPS FOR TERRIFIC TEACHING

**Your goal:** *helping others to learn*—you must subjugate yourself to this goal to be an effective teacher.

- (1) *Leave your ego at the door*—Teaching is not about you. In particular, it is not about demonstrating how much you know (even if you know a lot). It is about *helping others to learn*. Your focus should always be on devising ways to convey information in a way that is most easily learned, which is another way of saying that your focus should be on the students and what helps *them*. Ego will lead you to provide too much information, often information that is over the students' heads—you will have demonstrated your own mastery of the material, but at the cost of having left the students just as ignorant as they were at the start, and now less likely to approach you in the future for help.
- (2) *Meet the student where she is*—In other words, don't assume that they know more than they do. Chances are they know *less* than you think. They may be ashamed to admit how lost they are, so you may have to figure it out—*better to start at too basic a level than too advanced*. Use your empathy—remember what it was like to know nothing and to be surrounded by people you (thought) knew much more. Again, lose the ego. It's about figuring out at what level to begin, no matter how basic, so that they are not simply left behind again by your explanation.
- (3) *It is okay not to know the answer to a question*—The worst thing that you can do is to try to bullshit an answer. The students will almost always sense this and will lose respect for you as a teacher and an authority—and they won't have learned. They will stop asking you questions and will seek answers elsewhere (usually in all the wrong places). A better, alternative reaction is to turn the question into a 'learning experience'. Admit readily that you don't know the answer (after all, we are all students and there is far too much for any one person to know). Ask the student(s) how they would find the answer—what resources would they use? How would they go about it? Even better, ask them how they would figure the answer out if *nobody* knew the answer—what observations would they need to make, what experiments could be designed? Or, can they reason out the answer from first principles—what do they know already and how can they use that information to at least approximate an answer? Finally, if there's no time for all of this, simply answer that you don't know, but you will find out—and then *make sure you follow-through* with providing the answer.
- (4) *Convey your own interest and enthusiasm*—Don't be afraid of geeking-out. Be demonstrative when talking about things/material that excite you, even if you are not an expert. Use short digressions to give an anecdote or to simply describe how cool you think something is and why. Wave your arms and hands around. Express the sense of genuine *awe* you feel in the face of nature. Communicating interest, excitement and enthusiasm for a topic may be more important in some cases than the actual material taught.
- (5) *Reconsider your use of PowerPoint*—Use it for what it's good at: pictures and video; don't use it for what it's bad at: text. Use writing on the board to pace your speaking speed. Don't write everything—just key words, vocabulary, definitions, etc. Use simple drawings and diagrams liberally to the extent your skills allow. Force them to do the drawings, as well. PowerPoint then becomes useful as a supplement to reinforce your analogue teaching with a video or images that demonstrate what you were talking about. The powerpoints can then be made available to the students. In my opinion, providing the students with complete notes only

encourages many of them not to attend class/lab/lecture. Remember, *you* have something important, even critical to offer by your presence and your presentation that is not communicated by reading, alone.

- (6) *Use props, demos and student participation, if possible*—The bigger and more dramatic, the better. I know, we're not teaching children...but drama helps anyone to learn. Obviously not all classes/labs/material are suitable, but specimen-based labs and lectures are especially good for this. Hold things up, and if possible, pass them around. Some motions/movements can be enacted using one's own body and demonstration so that the students can do it themselves.

[Example: In comparative vertebrate anatomy, when teaching about the biomechanics of locomotion, I bring a sledgehammer to class to demonstrate the concept of 'moment of inertia' in the context of the distribution of muscle mass on the limbs of running animals—if you need to swing your legs back and forth quickly, it is better to have most of your muscle mass up in the proximal part of the limb with long tendons extending to the rest of the limb than having the mass spread out along the limb. Swinging the sledgehammer first holding the hammer end (proximal limb mass) and then the handle end (distally distributed limb mass) provides a visceral understanding of the concept not easily forgotten—much more effective than providing the equation, alone.]

- (7) *Use multiple sensory-motor pathways to convey the same material*—Some of the above tips provide examples on how to do this. Mixing up lecture with pictures, videos, demonstrations, physical participation, specimens, all reinforcing the same topic, will aid retention and increase interest and active engagement. A constant repetition of PowerPoint slides and written text will dull the senses and kill any interest that was there to begin with. Make them draw the diagrams you make on the board, even though they can find better pictures in a book or on the internet. Allow them to tape the lecture if they like so they can listen more than once. Encourage them to copy their notes, flagging parts that need follow-up. And whatever else you can devise.
- (8) *It's better to go slower and cover less material than it is to cover everything, but lose the students along the way*—If you have control over the material you teach, recognize that the amount of information that one could potentially teach to cover any given topic is virtually infinite. Even the most complete course will cover only a fraction of what there is. Make your peace with this, decide what information *you* believe is most important, and focus on this. If you don't get all the way through your syllabus, so what? (not that you shouldn't try) You will not be detained by the syllabus police. Do *not* feel compelled to teach the level of detail present in the typical textbook. What's the point of teaching *more* if the students learn *less*?
- (9) *Ask questions*—Occasionally ask students questions, enter into a dialogue, ask them to try to answer their own questions by going back to first principles and figuring it out from there (this is fundamentally the Socratic method of teaching—using a series of questions that guide a student to finding an answer). Give hints and ask again. Questions can be introduced briefly even in the middle of lectures. Wait long enough for someone to compose an answer. And *never, ever shame someone* for giving an incorrect answer, no matter how silly it might be! Create an atmosphere in the classroom in which questions are always welcome and easily asked. *There are no stupid questions*—cliché, but true. If you find that questions and class discussion are eating into your lecture material, so what? (see previous point)
- (10) *Remind them more than you think is necessary that you are always ready to meet and talk if they have any questions/issues at all*—[In an upper level class] you cannot overdo this. But don't worry—you will not be swamped by requests to meet. Nevertheless, they need to know

that you are happy to help them if they need it. Make yourself as approachable as possible.

**NOTE:** This piece of advice is context-dependent—in a large, intro. class this might be a bad idea. In this case, you might have to set limits on when/how students can contact you and how soon you will reply to emails, and whether you will meet outside of office hours, etc.

- (11) *Walk the line between friendly, approachable and worthy of professional respect*—Here you must find your own personal ‘style’. In my opinion it’s good to be as approachable as possible, and important to create a classroom/lab culture that is relaxed, friendly and conducive to questions/conversations. *However*, a few students will take this to mean that you are a pushover or will be overly (and uncomfortably) familiar with you. They may not treat you with the professional respect and basic courtesy you are owed. This issue is especially problematic for women instructors who are subject to basic sexual bias (by both male *and* female students!). Dressing more formally might help (not that it should be necessary). This issue can cut the other way, as well. You might wish them to see you as a friend they can trust. But, remember, acknowledged or not, there *is* a power differential between you and the students, and even if you are close in age, you *are not and cannot be* their friend.

*Corollary for teaching as a TA:* Do not *ever* date a student in your class. At least wait until the student is no longer in your class [twice while at UConn I have taught classes in which it turned out the TA was dating a student in the class...]. If you are dating an undergraduate and they end up in a class you are TAing, *inform the instructor immediately*. There is a University process to deal with this, but *it must be openly acknowledged or it could lead to serious consequences*.

*If you are a faculty member:* Want to lose your job? This is the fastest way to do so! And this holds even if the student is not enrolled in one of your classes and even if they are a graduate student.

#### Some Additional Tips:

- (i) *Teaching experience and professional goals*—If your goal is to obtain a position at a liberal arts college, then having substantive teaching experience can make a big difference in getting a job. Obviously, you will have extensive experience as a TA. You should try, to the extent you can, to make this experience diverse in terms of courses and level. However, you should also seek out opportunities to lecture. Ideally, this would include being the *instructor of record* for a course, e.g., a summer field course or the departmental seminar course. However, even basic lecture experience will help, e.g., giving guest lectures in courses you TA. Ask the instructor if you can give a lecture or two. Some might say no, but others will be happy to have a day off. Work with the professor on what content you should cover and then write your own lecture. When I write letters of recommendation for grad students applying for jobs, it is very helpful to refer to their experience in developing and presenting their own lectures and of course, how well the lectures were presented. The point here is that you will need to be proactive in seeking out these teaching opportunities.

If your goal is a position at an R1 institution, then your graduate teaching experience is unlikely to make much of a difference, but it certainly won’t hurt. In any case, many institutions/positions lie somewhere in between pure teaching and pure research. Regardless, resign yourself to the fact that your first several semesters of teaching will be one of the biggest challenges of your career. Until you get several sets of decent lectures written, you will never have a free moment.

(ii) *A note for new professors—teaching-scholarship trade-offs*—If your goal is ultimately to find a position at a liberal arts college at which the major criterion for professional success is the quality of your teaching, you will have the chance to develop, over time, courses that meet your highest standards for good teaching. Your principal time constraint will obtain from having to teach more than one course per semester. But for those of you who end up teaching at an institution in which there are expectations for research, note that there will *always* be a trade-off between time spent developing your courses and being a good teacher, and time spent doing research, writing papers and grants, and publishing. If you seek and are lucky (or unfortunate) enough to attain a position at an R1 research institution, I will go further and state that the trade-off becomes absolute—*ANY* time you devote to being a good teacher will, in fact, *hurt you in terms of professional success and income*. This may sound like an incredibly cynical statement, but it is merely a statement of fact. One of our own former Deans told new faculty this explicitly. No matter how much lip service is paid to good teaching, administrators *really don't care*. They care about external grants (and secondarily, publication productivity—not quality). I certainly know that I could be a much better teacher than I am and that my courses could be exemplars of their subjects if I had the time to spend on them. I have lots of good ideas. I simply can't implement them because it is too time-consuming. Nevertheless, my own *internal standards* require me to devote more time than is 'healthy' to teaching. My courses are always doomed to disappoint me (and possibly the students) because of the gap between what I know to be their potential and the reality of what I am able to do. It is my hope that at UConn you will learn to value good teaching enough to maintain a high (enough) standard even when costs arise. Everyone must find they're own path in this as in all things.