

A Personal View on Teaching as Voyage of Discovery

I see the teacher's craft as highly individualistic one. With a passionate commitment to teaching, there are as many paths to instructional success as there are teachers who would gladly teach. Commitment is the compass that guides the learning voyage, makes past journeys new as they are shared with other travelers, and which seeks a more promising and settled course. An avid sailor, I am inclined, as my students often note, to metaphors of the sea and sailing, perhaps overly so.

My own path, framed by the constancies of the scientific traditions in the areas of my teaching and research (vision and aging) and inspired by the outstanding teachers that I have known, has not been a static one. Rather it has evolved over a sometimes tortuous course, redirected by the ongoing "performance evaluation" provided by my interactions with students. But several guiding principles have endured these changes, and so I suppose, constitute my "philosophy" of teaching.

1. Neither intellect nor goodwill alone will assure success in most human endeavours. Accepting the validity of Aldous Huxley's conclusion that, "Intellect without goodwill is apt to go astray, goodwill without intellect is apt to be impotent.", I seek to realize the ideals of both, and try to encourage my students and colleagues to do the same.
2. Student achievement is served well by demanding learning goals. Or as better said by Robert Browning, "Ah, but a man's reach should exceed his grasp, or what's a heaven for?" (*Andrea del Sarto*)
3. Affective involvement and personal recognition are critical contributors to classroom achievement. Students respond more positively to the challenges of learning when recognized as individuals, and when learning is presented as a privileged and intrinsically rewarding experience. Operationally, that means presenting the subject matter in enthusiastic, personal and affectively engaging ways. It also includes being readily accessible to students outside of class, the continual search for more stimulating learning materials and interactive opportunities, and when class size permits, learning the names and some of the background of one's students. Although it is a view I have shared with my colleagues for many years, I am still quite amazed how well some students come to do when they are "noticed".
4. Research and teaching are interdependent activities. As I believe the appreciation of knowledge generation is an essential aspect of a university education, it plays a central role in my approach to teaching. This includes the encouraging students to constructive skepticism about knowledge claims and the appreciation of theory in the generation of new knowledge. These are fortified by lab visits, hands-on experience with research equipment, the design of original projects for lab students, and the supervision of original student research projects.
5. Scientific understanding is fostered when it can be related to the student's experience in the "real world". Thus, when students come to understand the principles of refraction, they are rewarded by the recognition that they now also understand such "practical" phenomena as mirages, diamonds, optics of the eye, and perhaps, even the Loch Ness monster. Success in this "lab-to-life" effort is indexed by students' ability to explain novel visual phenomena to others, or to offer viable hypotheses to explain visual experiences that they have had.
6. A picture is worth a thousand words. As might be expected of someone who researches vision and has an avocational interest in art, I endorse the idea that visual images, still and dynamic, can be powerful, flexible and efficient tools for assisting learning. My own teaching activities are supported by a large archive of visual materials that includes thousands of slides and digital images on art, vision, perception, and aging, numerous original computer-based labs and tutorials, optical and image-processing based simulations of visual problems, hands-on demonstrations of lenses, lasers, vision tests and photometric equipment, and digital slide shows "starring" students at work on lab projects.
7. Prompt and effective knowledge of results facilitates learning. In service of this principle, I try to respond effectively to all student questions in the class, office or via e-mail, to mark exams within a day

of their being taken, to review exams in the next scheduled class, and to “fix” any marking errors noted by the review. Or as I have stated to my colleagues and grad students, “For your students, make as few mistakes as possible; for yourself, be as forgivable as possible when you make them”.

8. Teaching is a dialectical process, one continuously changed by the students it seeks to change. It is important to remain open to the need to “try it differently” as unfolding events suggest the need to do so, and I invite “course correction” feedback from students on an ongoing basis. At mid-term, I administer a custom questionnaire to solicit specific suggestions for implementing course improvement. And near the end of a course, I use the formal course evaluation system to see to what I “got right” and what I didn’t, using both kinds of information to guide the next stage of the voyage.

9. Teaching is a voyage of discovery. You discover what works for students and what doesn’t and what works for you and what doesn’t. If you are attentive, you’ll discover where the two depart. And as your students explore the things that you had not paused to notice, their discoveries will become yours as well. There is no better or more rewarding way to understand a thing than to try to teach it – that will define the borders of your own understanding and lead you on to the discoveries that lie beyond them.

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