Statement of Teaching Philosophy

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There is so much more to teaching than simply disseminating information to a room full of students. Even within the framework of distributing information, the teacher must make sure that the information is being received. In addition, she should motivate her students to want to learn the subject she is presenting, if for no other reason than to encourage retention of the information. Further, at least at the undergraduate level, I think it is important for a teacher to provide support and encouragement to the students who seek it. While it may be impossible to make a personal impact on every student that walks into a classroom, when a teacher strives to be available to the needs of each student, more of her students will step up to the plate and work to fulfill their roles as learners in the teacher/student relationship.

Informing

During lectures my primary job is to explain new things to my students – new definitions, new conclusions, and new thought processes. At the early undergraduate level, though, it is not enough to simply present the information and leave the onus of comprehension in the students’ hands. It is my job to communicate with the students, which includes receiving their feedback so that I know which concepts need expanded expositions or different approaches. While teaching a trigonometry course whose class meetings were two hours long, I was especially open to such feedback from the students. As soon as students started looking overwhelmed or classroom participation started to lag during lecture, I would give the students an in-class activity to keep them active and let them determine whether they understood the latest material before moving on. I believe classroom participation is as much about me engaging with my students as it is about them engaging with me.

Motivating

As mathematicians, if we ask ourselves why we want to solve certain problems, the answer for many of us is simply because the problem is there. Many undergraduate students do not experience this natural curiosity in mathematics, often because they became discouraged in previous math classes. It is my job as an instructor to give the students a reason to be interested in class material beyond the pursuit of a good grade. The way I strive to do this is to promote the logical skills that are fostered in a math class. While I fully admit that students in a trigonometry class will not likely need to know the double-angle formula ten years from now (and, if they do, they can easily look it up), by learning how to apply the this formula and why it is true, they are learning the same skills that can help them learn new software, interpret sales projections or design a golf course in their future professions. Plus, understanding the reasoning behind the rules and theorems has the added bonus of making the math itself less daunting, as evidenced by this quote from an email I once received from a Calculus student.

“I really appreciate your passion for making us actually understand the meaning of the math we do. Especially with things that I learned in high school, like the power reducing formula, that had absolutely no meaning to me. I’m obviously not majoring in math, but I always liked it until I stopped knowing what was going on in terms of application.”

After earning a Bachelor’s degree in journalism, I worked in the sales and marketing departments of several minor league hockey teams before returning to academia. While this did little to inform my lectures (or my research) as a graduate student, it did give me several years of experience working with colleagues whose strengths and interests lay far outside the realm of mathematics. Because of this, I am better able to empathize with students who feel they are not good at math. I attempt to find ways to
make mathematics relevant to their interests, helping them to be more engaged in the class and motivated to learn the material.

Supporting

The final task of a teacher that stands out to me is that of encouraging the individual. As classrooms get bigger and work becomes more computer-based, I think it is essential that my students know that I view them each as individual learners. I was once at a round-table discussion with Michigan State University’s Senior Associate Provost, and she said that most of the students who end up on academic probation after their first semester at MSU can be identified within the first six weeks of the semester. Further, their grades and participation can often be dramatically turned around if a teacher contacts them individually and includes them personally in the classroom. Something as seemingly insignificant as telling a student that you noticed she missed class or calling on a student by name can have a huge affect on her relationship with the instructor and, consequently, the material of the class.

Some semesters, I pass out a survey asking the students what they like about math, what they may struggle with and what teaching techniques they have encountered in the past that stand out to them as especially good or bad. I have also had students write down mathematical goals which are not related to grades. The most common response to this latter assignment is that students claim to really want to understand the material and not just memorize the steps. I report this back to them, and I remind them of this throughout the semester to encourage them to ask questions in class and to come to office hours so they can truly understand instead of memorize. I find that starting the semester with these types of feedback activities encourages communication throughout the rest of the course.

Future goals

To date, the majority of my teaching experience has been as the primary instructor of Calculus I classes. While this has given me great experience at writing my own syllabi and exams, scheduling the material to be covered over the course of a semester and incorporating the use of technology such as WeBWorK, I hope to have the chance to work with upper level undergraduates in the future. I would like to teach linear algebra to math and physics majors so I could emphasize to the students the importance of the subject since I, myself, did not comprehend the ubiquitous reach of linear algebra until well after I had taken such a class. As a topologist, I would love to develop a course for undergraduate students on knot theory and point-set topology. I would also be interested in teaching a course which includes writing assignments and lessons in math history as part of a subject such as set theory or Euclidean geometry. I think such a course would encourage students with a fear or dislike of math in general to approach the subject from a more comprehensive point of view.

As I move forward, I hope to further personalize my expression as an instructor. I take pride in my teaching and I am always trying to implement new ideas for instruction and exploration of topics. No matter how many times I have taught a course in the past, I always review and modify both the syllabus and the assignments for the class before teaching it again. I know that if I simply repeat what I did in the past, I will get bored in my teaching and this will affect my students, so I always try to change something to better my lesson plans before the semester starts. By balancing the teaching aspects outlined above, I strive to keep my students engaged and encouraged so they can get the most possible out of my class and mathematics in general.