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 retainment 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 and to ensure that her class is open and inclusive of students of all backgrounds. 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 help students understand new material. Sometimes this comes through me explaining new concepts, and sometimes this comes through students working together or having time to practice or reflect while in class. At the early undergraduate level especially, 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. I believe classroom participation is as much about me engaging with my students as it is about them engaging with me. It is also important to recognize that students come into a class with different strengths and weaknesses, real and perceived, so it is essential to utilize various strategies and activities to help all students learn. For this reason I am very interested in incorporating different activities like writing assignments, iClicker polls and even video projects in math classes to help students see math as more than just pushing symbols around in the hopes of finding the “right answer”.

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. I do this in two main ways.

First, I get to know my students and their future goals. By knowing more about what my students hope to achieve, I can tailor my examples to fields of interest to them. Also, at the beginning of each new topic we cover, I can try to motivate that topic by introducing it in a way that the students may see as relevant to their future education.

Also, I aim 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.

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) in mathematics, it did give me several years of experience working with colleagues whose strengths and interests lay far outside the realm of mathematics. Since graduate school, I have had the opportunity to work with many students of different backgrounds as they begin their study of college mathematics. Because of these experiences, I am better able to empathize with students who feel they are not good at math.

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.

Future goals

I look forward to continuing teaching and implementing new ideas at all levels of college education. I enjoy teaching developmental classes and have experience writing my own syllabi and exams, scheduling the material to be covered over the course of a semester and using technology such as online homework. In the future, I would love to have the opportunity to incorporate self-paced learning at the developmental level and to continue improving my use of various forms of feedback for students, including balancing written and online homework and and using peer instruction in the classroom.

I have also enjoyed working with upper-level undergraduate students, teaching such classes as Topology and History of Mathematics. I would love the chance 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.

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. 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.