

TEACHING STATEMENT

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In this short note, I will begin to address the following questions: what are my objectives as a teacher, what means do I pursue in order to achieve these objectives, by what methods do I assess my degree of success in this pursuit, and why is this pursuit important? Since I am most experienced with first year calculus, my objectives, methods, etc. have been chosen with the students of first year calculus in mind. I am eager to teach more advanced topics, and look forward to the educational challenges they present.

I distinguish between two kinds of goals that I set for myself as an educator: motivational and intellectual. I set myself the goal of motivating my students to want to learn, to be willing to try (and hence willing to fail), and to be determined to understand the errors that they inevitably make. Intellectually, I want my students to be able to perform computations (differentiation rules, limit laws, basic symbolic fluency), understand concepts (eg., the derivative is a rate of change), be able to synthesize concepts and computations, i.e., able to use the concepts to inform computations and use computations to support concepts.

Currently, the means by which I attempt to achieve these goals are dynamic. I believe it is important to try new things and to stay flexible in order to serve the diverse needs of the students. In the past, I have tried to motivate students primarily by showing them how mathematics is relevant to their life, presenting problems whose solutions they are interested in, and whose solutions may be given by mathematics. A less direct approach I take is to make an argument for mathematics by character: I give the students an example of a caring, enthusiastic, relatable, successful student of mathematics, and I believe this helps to make the subject more palatable.

I encourage students to try by putting them in situations where they there are no negative repercussions to failure. For example, one semester I put problems on the board every class for the students to try on their own. After a few minutes, I would have them talk me through the solution. In this way, they receive immediate feedback on the effort. An alternative that I would like to experiment with is using a computer program into which they enter solutions to mathematical problems. This would be helpful in that the feedback could be made to be more personal. The underlying principle is the same: if you want someone to feel comfortable trying and want to learn from their mistakes, then let them try without penalty, and give them immediate feedback.

My strategies for assessing my success as an educator could be described as traditional with a modern twist: I assess my teaching by considering the quality of the students' work, and by their opinion of my ability (which they are asked to give anonymously twice per semester in the form of a survey, and which I make myself available to receive through-out the semester by an anonymous e-mail account whose login and password I give my students at the beginning of the semester). Peer evaluation is another method of assessment that I would like to experiment with.

My motivation for teaching mathematics —besides the basic pleasure of sharing something I love with others— is my belief that there is serious room for improvement in math education. The most obvious symptom of this is the terrible opinion the public has about mathematics. I believe that student involvement is quite low in most mathematics classrooms, and that by engaging the students more in active learning would rapidly improve students' interest in the subject. Math can be a fun, elegant, enticing subject, but most students never find this out. I want to understand why, and I want to do something about it.