

TEACHING STATEMENT

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For me, teaching is a collaborative and creative effort between students and teachers. It's a dialog, where the teacher charts the course from where the students are to where they need to be and the students respond with questions, discussions and effort. In this sense, a teacher is a navigator. Just as there are multiple ways from getting from point A to point B, the "best" approach to teaching depends on the current situation. The number of students in a course, their majors, the material, and other differences make each course unique. Even the same course with different students can result in very different teaching experiences. Thus I feel it is necessary to be adaptable in teaching and not be constrain to one style, method or process. This I believe will better help students learn.

I was fortunate to have some great teachers in my life. Each of whom had their own style and methods but one aspect I saw in all of them was their sincerity in wanting their students to learn. One quote from one of my English teachers resonated with me. He said "Writing is an art and a craft. Art is in the hands of God but if you wish to learn the craft of writing, I believe I can help." It's a cute line but the impact came from the fact that he proceeded to teach the craft of writing. From that, I saw a glimpse of the art and for me that was a moment where teaching was more than just a stream of information. It held the weight of knowledge. As I teach, I realize that I have stolen and adopted that quote for myself. I now tell my students that mathematics is an art and a craft. I love this quote because everyone can learn a craft. Anyone can hone their craft. So my role as a teacher is to help the students become proficient in the craft of mathematics and, maybe, show a glimpse of the art.

As a graduate student, I was mainly a teaching assistant leading sections that supplemented the lectures given by a professor. In these sections, I had a chance to experiment and try different techniques. In the beginning, I tried to emulate the professors and teachers I've had. As I taught more, I learned to adopt aspects of their teachings and combined them in different ways to try to be more effective in helping the students learn and to be more active in their learning. Some classes I took a more motivation through applications approach, while others I took a game approach to problem solving. For proof based classes, I experimented with variations of inquiry based methods, sometimes with emphasis on presentation and questioning the textbook and other times with worksheets I prepared. It gave me a sense of what worked well and what didn't in different situations, which helped me get a better feel for teaching.

This culminated this past summer when I taught my first course as instructor of record. It was a linear algebra course with 100 students in a compressed 6 weeks, from a typical 10 week quarter. Leading and managing the course was a lot of responsibility but coming at it with the intent of helping the students learn really set everything into place. For this course, I tried to keep the students engaged and on top of the material since the amount of time for the students to absorb the information was shortened. I organized my own lectures and lecture notes so that I could arrange topics that reinforced the ideas covered in the previous topics. This gave the students more exposure to the material so that they

can get more comfortable with the ideas in that short time frame. Talking with students and hearing their interests and majors allowed me to motivate topics with applications in computer science, physics and engineering which in turn got students to ask more questions. There were more things that I did, some that worked and other that didn't, but overall I feel the course was a success.

The success of a course is hard to quantify, but for me it's when the students grasp the underlying ideas. That is not an easy thing to measure but for me the best gauge comes from interacting with students. Exams and quizzes are one way of measuring this but the questions students ask and discussions outside of class, gives a much better indication of where the students are. This requires student participation which requires an environment where students feel comfortable to ask and discuss questions and topics. For that I believe honesty is the key. For the linear algebra course, I told my students that I was here to help and emphasized the ideas and topics of Linear Algebra are not easy, especially with the short time frame. This took away any pretenses and promoted questions, thoughts and participation which gave me information about what the students understood and where they had troubles. Knowing this allowed me to adjust the course to cover topics that would reinforce ideas where the students are struggling or to move on from a topic.

Even though I feel my first course was a success, there are things I want to tweak and other things I want to change. Some methods helped the students learn better while other methods were not as effective but these are aspects to think on and improve upon. It's a process. Just as there is a craft in writing and a craft in mathematics, the same can be said for teaching and for me part of teaching is to always be honing that craft.