

Teaching Statement

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My personal style of teaching has evolved over my nearly eight years of experience as a lecturer and teaching assistant, in both graduate and undergraduate courses. I strive to make each semester one in which students can leave with a greater confidence that they did not just pass their mathematics course - that in their words, they actually “got it”. For me, a class is a success when I see students walk away equipped with a stronger analytical ability that they can use in their future careers.

While a detailed account of all my teaching experience is contained in my CV, I would like to highlight a few points. I began working as a teaching assistant in my third year of undergraduate studies when I ran my first recitation at the University of Toronto. Since then I have assisted in numerous classes in both mathematics and computer science, from graduate algebra to first year calculus. One particular teaching experience has been quite memorable for me. Each year, Cornell University runs a series of three seminars at the local Ithaca High School in a topic of advanced mathematics. This Ithaca Senior Seminar is meant to get high school students excited about mathematics that they wouldn’t see until later in their college education. For six weeks each year (three years in a row), I designed classes and assignments in my chosen topic. I introduced basic algebraic geometry the first year, with combinatorics and number theory being the topics in subsequent years. I was amazed to see a genuine enthusiasm for mathematics. I remember one lesson where I taught them about projective space, smashing their long-held belief that parallel lines can never meet. The wonder that they had was absolutely energizing. I find that as we master subjects in mathematics, we sometimes forget the beauty of what we are working on only to be reminded of it through our students. This is something that truly makes me passionate about teaching.

My teaching methods have certainly diversified since I first started. I have tried to improve the classroom experience based on student feedback and success stories from other instructors. I first adopted a teaching style based on my own undergraduate experience where a class consisted of a full lecture without activities. A professor recommended that I change this and try some activities in my calculus class. While reluctant at first, I decided to design a cryptograph-type activity where each letter corresponded to the solution of a specific limit problem and the student groups competed to decipher the secret message. I was thrilled to find that the students enjoyed the activity and learned more as a result! They were more confident in asking questions (since the entire class wasn’t focusing on their inquiry), and I was able to focus on helping students who asked for it. Students later told me that they felt better prepared for the test because my activities and quizzes helped them evaluate what material they actually understood. The evidence convinced me that incorporating more of these activities can be beneficial, and I now plan my lectures from this viewpoint.

I work hard on refining my approach to many of the common aspects of teaching: caring to reach all of my students ensuring that everyone understands the material, purposely presenting different examples from those in the textbook, preparing lecture notes for myself as an organizational tool (the flow of a lecture is in some ways as important as the content). I like working through difficult examples while providing motivation for the material. I recently learned that one of my calculus students enjoyed my class so much that he has decided to change his major to mathematics, even considering a career in academia. He became inspired when I highlighted some advanced topics during lectures and office hours. He told me the story of how he didn't have many opportunities to be exposed to mathematics while studying in Brazil, and his first math course at Cornell had ignited his long-held interest in mathematics. Such stories make teaching worth it for me.

In the end, every instructor offers their own unique flavour of teaching, often influenced by their own personal experiences from the classes they taught and the courses they took. My style of teaching is directed towards the goal of imparting a true appreciation for mathematics - even encouraging students to explore beyond the curriculum. The most memorable semesters (and perhaps the busiest) have been those filled with teaching duties. I have noticed that teaching fosters my own research and makes me a more complete and balanced mathematician. There is a certain joy in watching my students discover mathematics; in getting excited over concepts which I have considered routine for some time.

I want to conclude with a saying that I have developed a deeper appreciation for since I started teaching: "Do you want to know the difference between a master and beginner? The master has failed more times than the beginner has ever tried". We were all students once; in many ways we remain students.