

TEACHING STATEMENT

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My first teaching experience was rather challenging. I had volunteered to give a series of lectures to a group of grade school students at an after-school math enrichment program, the Boston Math Circle. Recognizing that most grade school students regard listening to math lectures as an activity on par with painful surgery, I expended a great deal of effort in designing a lecture that presented serious mathematical content carefully disguised as a series of entertaining games. Three sentences into my lecture, an interruption: “I did NOT come here to learn about games! I am going to do my math homework!”

I was temporarily stunned by the student’s comments, but I quickly recovered and explained to the class both the game and its mathematical significance. Satisfied, the 7-year old mathematician put away her homework and paid close attention to the rest of my lecture. I learned as much as my students that day; I learned that it is crucial to not only deliver engaging lectures, but also to deliver lectures that meet the students’ needs and expectations.

How to design such lessons? There is no simple answer, but in my 10 years of teaching experience, I have developed general principles. When I taught at the Boston Math Circle and later at the Michigan Math Circle, I taught students that were very enthusiastic about learning but had very limited mathematical experience. In designing my lectures, I searched simple, easily accessible topics that illustrated basic mathematical principles. The classroom was very interactive with ample time allotted for students to explore topics on their own.

When I first taught at the University of Michigan, I taught introductory calculus, Math 115-116. The needs and expectations of the students in calculus are very different from those in the Math Circle. Calculus students typically have little prior experience with calculus and are taking the course as a requirement for their major. I always prepared my lectures with their backgrounds and interests in mind. My lectures were designed to emphasize how to understand and apply the basic tools of calculus. Like the Math Circle courses, the calculus courses at Michigan are designed to be interactive, but classroom management must be handled differently. In calculus, the students are very intimidated by the material, so I was careful to regularly check-in with students to make sure that they were not stuck on a particularly challenging question.

More recently, I have taught courses for advanced math majors and beginning graduate students (Math 316, Math 425, and Math 731). These students have both a strong math background and an enthusiastic attitude towards the material, so course preparation is more straightforward: find interesting and challenging topics to present. There is, of course, a difference between theory and practice, and I typically find myself investing lots of time preparing suitable lectures.

Even the best teacher in the world can improve his or her teaching, and I try to regularly evaluate my teaching through both official and unofficial course evaluations. I believe that my students benefit from the time and energy that I put into my teaching, and I hope this opinion is shared by my students. At least some of them share it; one of my recent course evaluations reads: “Mr. Kass does a great job of respecting students and trying to help fit their individual needs.”