TEACHING STATEMENT

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1. Teaching Philosophy

When teaching a class, the most important points for me are the following.

- Students should be actively involved in learning during class.

  I believe that it is almost impossible to learn mathematics passively, hence one of my goals as a teacher is to create a friendly atmosphere in class so that the students feel comfortable to ask questions and participate.

  I make my classes interactive. From the first class I try to involve my students in the problem-solving process. One of the most successful methods I found is to lead the students to the solution by asking them more specific questions. This helps the students to start thinking about the problem and at the same time initiates a discussion between me and the students. As time progresses the students feel more comfortable participating in class discussions and do not need as many leading questions. Another strategy is to make students work in groups on some problems and then present their solutions to the rest of the class. This gives students practice discussing mathematics with their colleagues and stimulates them to actively participate in class.

  Encouraging students to ask questions is also one of my primary goals. It not only helps students understand the subject, but also helps me better understand the students' problems. For this reason I am always open to questions during the lecture even if answering them means that I need to adjust my lesson plan. I also encourage my students to come to my office hours, or to e-mail me their questions. If the students are unable to come to office hours I am always glad to make an appointment for the time that works well for both of us.
- The teaching style should be adjusted to the needs of the particular audience.

  At the beginning of the course my students fill out a questionnaire, where they are asked about their mathematical background, reasons for taking the course and future plans. This helps me understand my audience better and adjust my teaching accordingly.

  For example, to motivate the material I am teaching, I usually give a lot of real-life examples. I especially like to give examples from the areas my students are going to concentrate in or are interested in. This way the students are more interested since they do not feel like they are learning something that is completely irrelevant to their future.

  The students have different learning habits. When introducing a new concept or solving a problem in class, I try to present as many different points of view and approaches as possible, thus appealing to a broader audience.
- The class should not only teach some techniques but also show the inner logic of mathematics.

  Most of the freshmen taking calculus think that math is all about formulas which they have to memorize. My goal is to show them what is behind those formulas. I try to explain them the basic concepts and the inner logic connecting them. When

choosing the problems to do in class or for the exam I look for those simple from the computational point of view but revealing the meaning of the concept.

I want my students to leave my class feeling that they learned not simply a bunch of recipes for computing derivatives or integrals, but a strategy of problem solving that can be used to approach problems, whether mathematical or non-mathematical.

2. Training and Experience

While at Harvard, I taught one-semester calculus classes for four years. To prepare for this job, I participated in the Apprenticeship program organized by the Mathematics Department. At the end of the program, I had to develop and deliver three lectures to a real calculus class. They were videotaped and I later watched them with an experienced instructor who gave me a lot of very informative feedback about my teaching style.

When teaching, I was fully in charge of my own section, and also I participated in the development of homework problems and exams for all the sections. We had weekly meetings with all the lecturers for the class where we coordinated our teaching plans as well as discussed ways of improving our teaching. This allowed me to observe experienced instructors' teaching and at the same time to try to incorporate their successful methods into my own teaching. Students' evaluations as well as discussions with students during my office hours have also greatly influenced my teaching.

During my first year, I worked as a supervisor in the Math Questions Center at Harvard. The Questions Center is staffed by Course Assistants for different math courses and is designed to help students with their homework. I was coordinating the work of Course Assistants and also helped the students myself. This was a great opportunity to understand better american students and american approach to teaching.

During these years, I participated in several teaching conferences and seminars organized by the Department of Mathematics where I had a chance to learn about teaching from my more experienced colleagues.

I taught calculus classes of different levels, mostly to freshmen, and gave several professional talks. I learned to adjust the level of complexity of the talk and my teaching style to my audience.