

Teaching Statement

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Introduction

I believe that the most important prerequisite for a good teacher is that he likes to teach! I thoroughly enjoy standing in front of a class and see how students think about the concepts I explain. You see the look in their eyes saying more clearly than anything, “got it!!!”, and that is exactly what makes teaching so enjoyable!

Teaching Philosophy

Throughout my time in school, high school and University I have encountered many excellent teachers of mathematics, each with a different teaching style and way to organize the class. If I encounter a good teacher, I try to incorporate the specific parts I liked into my own teaching. I use my teacher of hyperbolic geometry as a model for being well-prepared and organized and always having time for his students. Also, when I see examples of bad teaching I pay careful attention in order not to make those mistakes myself. Being an excellent teacher requires an ability to grow, both academically and personally. The fundamental thing I always keep in mind is that I am there for the students, to help the students succeed in the best way possible. To accomplish that I have to be *well prepared* and *organized, available*, create an *inviting atmosphere*, *adapt* to the needs of the students and able to *clearly explain the key concepts*. I will elaborate on these points below, and explain how I incorporate these key points in my teaching.

For a student to be able to respect me as a teacher, I need to be well-prepared and organized. When I work as a teaching assistant I have a detailed plan for each recitation of what I want to cover and what problems I want to go over. When I teach a class myself, I make sure to have a detailed plan for the course made before the semester starts. I always share the plan with the students so they can compare the covered material to where we should be according to the plan. I always make sure to keep a detailed record of what sections I have covered on the course homepage so the students can easily see what they are expected to read. At the end of every class I also give a very brief summary of what material will be covered in the next class. This is very beneficial for the students since it allows them to easily prepare for the upcoming class. Being well-prepared is also essential for presenting clear and concise explanations. Since new concepts are always confusing for the students is it essential for their learning experience that I explain the concepts in a precise,

straight forward and easy to understand way. After finishing the course Math 240 two students in my recitations, Ryan Menezes and Danny Puller wrote me the following: "I want to thank you for being such a great TA this year. You were always prepared with notes to review the hardest topics from lecture, unlike other TAs I've had who would sometimes just ask if we had any questions. I know you may be wondering why I'm thanking you for this, because you think that being prepared is simply an obligation, not something extraordinary. That kind of mindset is what I appreciated the most." and "...John is very sharp and comfortable with the course material to the extent that he could answer all questions accurately and with confidence. He was very patient when confusion arose, and consistently demonstrated an ability to communicate mathematical ideas clearly and concisely."

It is essential to have an inviting atmosphere where the students feel comfortable asking questions and interacting with me as a teacher. I do this by learning the student's names early in the semester and always address them by name. I strongly encourage students to ask questions and, since discussion is difficult with many students, encourage them to come see me during office hours. I make sure to always praise a good answers and question, and if the answer is not exactly correct, I emphasize the good part in their answer. I also prefer to have some of the students do problems on the board. I do whatever necessary to make that a success for the student, so they do not see it as something I use to judge them on. I recall one specific episode from a Math 240 recitation. I wanted one of the students to present a problem at the board, and asked for a volunteer. I noticed one students (who was quite good) being very hesitant so I asked her if she wanted to do the problem and she said "I don't think so!" I insisted that she should try and reluctantly she agreed. I knew well that this was a delicate situation since a bad experience could discourage her from ever doing it again, so I made sure to give her all the help she needed by asking her guiding questions I knew she could answer. This way she felt successful and confident, and her presentation ended up being excellent. This illustrates that if you push the students a little, making sure they get a successful experience, you can increase their confidence which is vital for the student's ability to learn. Danny Puller wrote me the following: "In an otherwise quiet classroom, John had the rather impressive ability to strike up conversation among weary college students at 10am in the morning."

Since I have been and will be teaching a very diverse group of students, it was and will continue to be essential for me to be able to adapt to the needs of the students. One essential thing is that the syllabus must fit the need and the level of the students! The examples I use to illustrate the theory should also be something they can relate to, preferably something that is directly relate to their main field of interest. When I taught the course Math 115 I had students who specialized in economy, history and social science. I carefully chose the examples in probability theory and calculus from these fields to illustrate the general theory. The students

appreciated this approach which they felt gave them a concrete way to relate to otherwise abstract theory.

Regardless of whether the student's motivation is to become math majors, to take the course as a requirement or just to see what it is all about, I am there to help the students make the most of the class and for that being available is essential. At the beginning of the semester I make it clear that I will be happy to help. I make myself available by staying for 5 to 10 minutes after class to answer immediate questions that arose during class. When I taught Math 115 I gave lectures Monday-Thursday and scheduled office hours every day after class, so the students could stop by any time they needed help. I also let the students know that I would be happy to schedule an individual appointment outside regular office hours to provide individual guidance. My combined efforts of running a good class, my willingness to help in particular, show the students that I care about them and that they can rely on me to help them succeed in the class. I see mentoring of students as an essential part of being a teacher, and a part I enjoy very much. My Math 240 student Steven Plimpton and Danny Puller wrote me the following: "The most striking feature of your character as an instructor is your devout dedication not only to your students, but also the course material. I've never had such an accessible teaching assistant. In particular, the evening session that you arranged to replace a missed recitation spoke deeply of your commitment" and "John also showed a great willingness to help students by accommodating them at additional office hours and via e-mail correspondence".

Conclusion

Teaching is always a very positive experience for me and the feedback I have received confirm that the students enjoy the experience of having me as a teacher. Mathematics is a beautiful subject and I look forward to sharing it with both students and colleagues for many years to come.