

# Teaching Philosophy

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My experiences, both as a student and as an instructor, have caused me to take teaching seriously and view it as a calling, rather than simply a task that must be done. As a student I studied under several exceptional professors who have had significant influence on me, and as I mature as an instructor I seek to emulate them in my teaching methods. My goal is to have a similar impact in the lives of my students, helping them to grow into curious and confident young scholars. When I reflect on my outstanding professors, and how I want to be as an instructor, I try to pinpoint what it was that made my great professors great and this helps me clarify some of the essential attributes that I want to exemplify as a teacher. When I was studying under them, I felt as if I was an athlete and my professors seemed like trainers. Just like good coaches, my professors took the initiative in my growth as a scholar, they maintained high standards for me, and they went beyond basic instruction to play a mentor role in my life.

Just as a good trainer is pro-active in the training of an athlete, good teachers are pro-active in the learning processes of their students and will help them reach their full potential. An effective trainer not only instructs the athlete in the theory and technique of their particular sport, but actually “steps inside the ring” with him or her and instructs them to demonstrate some of the different moves that he or she has been taught. In the same way, effective educators bring out the best in their students by being engaged and intentional in the students’ learning process. As a student, I noticed that instead of being distant, my best professors were deliberate and passionate about shaping me as a scholar. While teaching an accelerated summer calculus course as a graduate student at Northwestern I sought to emulate that same passion and commitment both inside and outside the classroom. One of the ways I did this was by holding extra office hours and review sessions and meeting individually with students at their convenience. One particular example was a student named Brandon who was beginning to struggle in my class, but was not bold enough to come to office hours and ask for help. I sought him out and met with him outside of normal office hours to help review some concepts. Because he saw that I cared about him and his progress, he responded to this purposeful style and significantly improved his performance in my course.

A successful trainer holds an athlete to a very high standard of performance and will push them to do their best, all the while bringing about confidence in him or her by encouraging and helping along every step of the way. Analogously, my best instructors held me to a high standard intellectually yet aided me in each step of my learning process. Like good trainers, they believed in me as they pushed

me to do my best. The result was that I had a solid foundation and I was empowered to realize and follow my own intellectual curiosity. One particular technique they used to bolster my confidence as a student was encouraging me to be active during office hours. Some professors would ask me to use the chalkboard in their office and begin the problems I was asking questions about. Then as I reached the part of the problem where I got stuck, they would coach me through until I understood and was able to work out the rest of the solution on my own. This technique was very effective in establishing faith in my own problem-solving abilities. Now that I am an instructor I use this same technique in my office hours and sometimes during lectures in smaller classes. My goal is to build self-assurance in my students as they find that they *can* solve problems on their own. Another technique I use in class is to ask conceptual questions that bridge previous ideas with new concepts. This helps my students become more sure of themselves, as many ideas in mathematics are reused in slightly different contexts. The result is that new concepts don't seem so foreign, and students can grasp them more quickly.

Finally, a good trainer is also a mentor and uses his or her own experience to help guide the student. Similarly, an important role of a good professor goes beyond standard classroom teaching, but it involves guidance in a mentor role. Drawing from their own experience, mentors offer guidance in many ways, from grant writing to career decisions and which direction to take a research project. Several of my professors from my undergraduate training, as well as my dissertation advisor, have played this role in my development. As a post-doc, while teaching an advanced calculus class for freshmen engineering students at Ohio State, I was able to play a mentor role to several students regarding issues not directly related to material covered in the class. These students enjoyed my course and wanted to learn more, so they would come by my office to learn about a math major or minor, or career options with math. Some students ended up declaring math as their major, some as a minor, and some are investigating various math careers. Also, as a post-doc I've been able to mentor a few students in undergraduate research projects of various forms. I was a team leader for one summer research group and one of the students from the group is continuing his research and is turning the project into an undergraduate thesis. As I work with these students, I am able to draw from my own positive experiences being mentored to guide them and help them grow as scholars.

My background so far, both teaching and learning, has shaped my view of the teaching endeavor and has clarified my vision for myself as a mentor. I look forward to continuing my journey as a teacher while I mentor young scholars and develop in them a similar thirst for knowledge that has been developed in me.