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December 2014  
Statement of Teaching Philosophy

Stress, discomfort, and anxiety can inhibit a student from learning effectively, but learning is about exploring beyond the known, the very concept of which can be unsettling. Therefore, I begin my teaching by alleviating my students' anxiety over the fear of the unknown. Once such an environment is established, I can offer more than simple answers to ordinary questions and instead inspire students to raise exceptional questions and explore more complex topics than they previously imagined possible. I am excited at the prospect of facilitating the development of students into mature thinkers who actively seek out opportunities to wrestle with tough questions, and I have enough experience teaching to be humbled by the challenge that poses. I strive to teach in a way that makes the material accessible and understandable to all students, providing them with confidence in their abilities and leaving them intrigued by what may be possible so that they can formulate and ask themselves new questions, fearlessly pursue their ideas, and recognize any insightful revelations they discover.

Our western society places a tremendous amount of value onto an unfortunate notion of "smart": "Smart" people know the answers without even trying; "smart" people don't need to study; and perhaps worst of all, "smart" people don't get confused. The problem with this notion is that students internalize the belief that they either get something or not – that they are "smart" or not – and they don't embrace the idea that, though it may be hard and uncomfortable and require questioning their own knowledge, they can *learn*. True learning is a struggle, requiring that one risk becoming confused, making mistakes, and perhaps even failing; it is only when a student has embraced the struggle that he or she is actually learning. This is why it is critical to make students feel comfortable with their own uncertainty and to admit when they don't know an answer or don't even understand the question. In my office and my classrooms, I create a climate where students feel comfortable being uncomfortable and feel safe showing ignorance. I tell them that it is not bad to be confused nor is it their fault; indeed, if one of my students does not understand something, I feel that it is *my* responsibility as the teacher to correct that. I tutored two high school students in math and science for a few years, and early on, when I asked them if they understood something, they were so afraid of saying no that I needed to give them the words to critique my teaching: "Perhaps you want to tell me 'That analogy doesn't work for me' or 'I don't know what that word means.'" However, once they learned that I held no ill will toward their lack of understanding, their true desire to understand (and not just answer the homework problems) showed through and their learning took off.

The first time I taught, as a sophomore at Brown University, I tried giving some help to a student who didn't understand the problem he was working on. It seemed simple to me, and I explained it to him in the way that made the most intuitive sense to me. No luck – he was still confused. I thought he was just trying to be difficult, maybe trying to get me to simply give him the solution. I eventually passed off the student to another TA, and it was not until I saw their interaction that I began to understand what was going on: a concept that is intuitive to me may be indecipherable to another, and an explanation that is clear to another may seem bizarre to me. I was teaching in a way that was best for me rather than the way the student would learn best. As I have evolved as a teacher, I have learned to try different methods to get through to students. Perhaps I will begin with a theoretical overview, and if that has no effect, I will move on to some concrete examples. If the examples don't work, I may try an analogy or turn the problem into a simpler exercise. There is no magic method that will work best for everybody, so I must work *with* the student.

Learning is not just about taking in knowledge that is given by the professor (as if the professor were an urn filled with knowledge that he pours into the brains of students). Instead, it is about engaging with material by questioning it, pushing its limits, and understanding its essence rather than merely memorizing its definition. While at Yale, I have been a teaching assistant for the introductory course five times, and I cannot begin to count the number of times a student has come to me for help asking, "How do I fix this?" The student usually does not even know that the right question might be "What does this error message mean?" or "Why is my base case never firing?", and so I must begin by helping him figure out what to ask: "I can't help you fix it until we know what's wrong? Let's figure out where to begin." Where the student may have once seen the broken program as an impenetrable wall of the unknown, this encouragement toward thinking critically is often the push he needs to start exploring that wall. For instance, I had one student whose code showed a clear misunderstanding of the assigned algorithm. Although I could have shown him exactly where the problematic lines were, instead I had him show me how he thought the algorithm worked on a whiteboard, removed from the burden of exact syntax and type errors. Together we discovered the parts he didn't understand, and when we were finished, he was able to fix his program on his own without my help. My very next student asked a similar question, and under my supervision, I had the first walk her through the same process, cementing the ideas in his head while enlightening her at the same time. In this way, the students learned the specific algorithm in question, a process for more general troubleshooting, and also the fact that their classmates can be valuable resources. One of my students summed up my teaching style in an anonymous post-course review: "He won't give you the answers, but does a great job of walking you through concepts that help you figure things out by yourself."

To be able to inspire students, we first must design the course, and with any course, we must consider assignments, evaluations, and grades. With six semesters of undergraduate TAing and seven more as a graduate student, I have created rubrics, graded countless assignments and exams, and fielded many questions about grades as opposed to just material. Grades are an important metric to allow both student and teacher to evaluate a student's progress through a course. I take grading very seriously and believe that fairness and consistency are paramount – I insist on blind grading and make sure that students' answers to a given problem are graded by the same grader at the same time. Despite this, students still sometimes approach me looking to get a couple points back. Assuming the complaint was not a simple grading error, I take the opportunity to go over the mistakes the student made and then reiterate the previous lesson that making mistakes is a perfectly natural part of the learning process. A few points here and there make little difference, but the ability to recognize and accept a mistake and to truly learn from it is much more important.

I joined the undergraduate TA program at Brown because I was excited to teach, and I TA'd for every semester until I graduated. During my time at Yale, I was required to TA for two semesters, but I taught for seven, expanding my responsibilities to include giving and designing lectures as I became more senior. Through this time, I have grown to become attuned to what my students are experiencing as I present material to them. With experience, I have learned how to scan a classroom of faces, quickly gauge comprehension, and immediately know if I should reiterate a concept from a new angle. While I once felt nervous and afraid before giving a lecture that came out rigid and forced, I now feel comfortable, at ease, and better able to work *with* the students, creating an environment of mutual interaction with questions and answers flowing both ways. There is always room for improvement, and I make a mental effort to monitor myself, to keep the class engaged, and to make sure my students really can convince me that they are learning.