Teaching Philosophy

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As a child, science has always been an escape for me. It allowed me to go into a world that was safe and familiar—imagining the earth rotating around the sun, the elastic impact the rain has on the pavement. It was a therapeutic way for me to handle difficulties that I had in my life growing up. I also realized the insight and knowledge I gained was uniquely mine. Although, we all know about the earth rotating around the sun, how it ”felt” to me and how I perceived it was uniquely mine and I reveled in the fact that *no one* could take it away from me. During college and graduate school, I realized that I could actually make a living from the skills and insights I gleaned from science. I was very surprised that people would actually *pay* me to go into my world to analyze data, to write code, to understand a biological and/or physical system.

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These experiences are the key factors that shape my views and philosophy on teaching. The pleasure in teaching for me is in sharing this safe and wonderful world with my students and if the students are willing - for them to share their own unique world with me. My views of teaching affords me many advantages, such as the effortlessness in having insightful discussions with students, the enthusiasm and energy that I am able to share during my classes and my ability to connect with students who have similar experiences and enthusiasm for the work. The disadvantages are that I sometimes alienate students by my enthusiasm, I have difficulty reaching students that just want to ”get-through” the class and don’t understand why I can’t make it easier for them.

Overall, my own personal tendencies are to allow my students freedom to explore the topic on their own. I see my role as more of a mentor than a lecturer. With so many great videos online and so much amazing material available, I don’t believe that it is necessary for teachings to lecture as much but to be facilitators of understanding. It should free us to take on a different role in the classroom and I’m excited to be part of a generation of educators to define what that role will be. I, therefore, believe that the classroom should be used for discussion and doing problems, no longer should be used to *“watch”* lectures. I firmly believe that each of my interactions with my students allow them to ”learn-to-learn” and not learn the material. Consistent with this philosophy, I believe in the use of classroom reversals and assigning lectures as homework and homework as classwork, etc and consequently the belief that the true test of mastery is the ability to teach the material to true novices.

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The difficulty for me then, is how to remain pragmatic about the process. I have to remind myself that as much as I love to engage in this sharing process, that for many others - especially the majority not intending to pursue a PhD in the area - that this experience is often either an obstacle and/or necessity for their goals. This usually means that doing well in the class will afford them a well-paid career. I try to balance this with well set expectations in a bullet proof syllabi and explicit expectations in relations to tests, exams and presentations. I myself have been through 4 different schooling systems growing up from liberal american schools that are inspirational, but expensive and inefficient to pragmatic, highly efficient, cost saving but rigid Singaporean systems, where you're ranked against everyone in your class, school and nation. I therefore understand the need and benefits of being able to get through material and acquire the skills even if you don't "like" it and balance that with a class that will inspire students to want to learn more - to nurture a sense of natural curiosity and growth.

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At the end of the day, however, I am still a scientist and engineer. Data is the my world and data is what will drive my classroom. I understand that each cohort is going to be different but my goal is to have a classroom where everything I do is supported by prior data that it helps the students. My aspiration is that I will be exceed my own expectations, which will afford me the leeway to experiment with techniques that may not reach all students, as well as afford me space to fine tune my execution of these techniques. My teaching philosophy is one of inspirational learning with a very healthy dose of pragmatism - driven by the understanding that I will inspire some students but must always reach all of them.

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