

Teaching Philosophy

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“Talent is everywhere, but they are rarely recognized.” I regard teaching as a training for my own eyes. I think that every student must have their strengths and shortcomings. We as educators must learn how to pass knowledge to each student more efficiently. The following are my thinkings gained from my limited educational experience. I will continue to summarize and improve them in my future work and study.

Since my undergraduate and master’s mathematics background and my research area is econometrics, I have been assigned to teach quantitative method related courses. These classes require students to be good at math or/and to have good abstract thinking. However, I can not unilaterally hope that all students meet the requirements and deliver the knowledge from the textbook to them without individuality. I challenge myself to teach students very complex theoretical knowledge in an intuitive way. For example, linear algebra is a complicated topic for many undergrad students. One of the reasons is that it is difficult for students to associate it with real life. But I find that they can learn better if I can make them feel they are geniuses by explaining matrix multiplication is a space transform to another space by expanding and rotating. Another example is about eigenvalues and eigenvectors. From my teaching experience, most students have difficulty in understanding them because they are so abstract. However, if I use R to generate a graph and show students that eigenvectors can be used to find the most informative component and the eigenvalue shows how informative that component can be, then students would feel excited to learn these abstract concept because they are so useful.

I believe motivation is the most crucial thing in the learning process. Because if students have the motivation to learn, they will learn anytime, whether at school or home. So, I think it’s much more essential to make students interested in knowledge than to teach them knowledge itself. There are two main ways that I make students interested in learning. First, I will tell students a “big picture” before touching the details, so that students can know how this knowledge is applied in real life. Second, I will let the students feel that this knowledge is accessible. To achieve this goal, it is necessary to take into account the students’ learning ability. For example, the OLS is one of the most critical quantitative analysis methods in the undergraduate stage. Before I explain the OLS, I will spend a lot of time introducing how popular the OLS is in the industry. When it comes to the details, I will split into two phases. First, I will teach them how to apply the OLS, including how to use R to do regression analysis, how to decide correlation by p-value, and how to interpret the meaning of coefficients. For students who have weak quantitative backgrounds, it is good enough for them to get a high grade in my class. For more ambitious students, I will also teach them some asymptotics of the OLS and its limitations, and briefly introduce some advanced methods like instrumental variables. I will tell my students which

knowledge is required to get a good grade in my class and which knowledge is optional and only for them to explore. In this way, students with weak learning abilities will not have the pressure to fail my class, and students with active learning abilities will also have the opportunity to study further.

Lastly, I'm good at many programming languages, especially at R. So I can not only teach students programming but also use visualization in R to help students understand some complicated theories. I also use HTML/CSS to build my course website ([Here](#)) to make my course more exciting and accessible to my students. During my Ph.D. time, I have done many Monte Carlo simulation works, so I know how helpful simulation can be for students to learn econometrics or statistics.

I am willing to teach a variety of courses to meet departmental needs. As a future assistant professor, I will strive to advance the development of my students in different aspects. I look forward to more opportunities that will improve and broaden my teaching competencies and allow me to share my enthusiasm for economics knowledge with students.