## Teaching Statment

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Throughout the last six years of my PhD, one of the most rewarding through-lines was learning how to most effectively teach economics and engage students in the economic thought process. As an undergraduate student, my best economics professors were those who fostered their students' curiosity and created an environment where students actively engaged with the course materials. From my experiences as a student and my academic interests in the science of pedagogy, I sought to create the same environment for my students as both an instructor and a teaching assistant.

My central teaching philosophy is to stimulate students' natural curiosity about a subject to motivate deep learning of the topic thereafter. Besides being motivated by my experience as a student, this philosophy also has scientific support. Neuroscientists have shown that stimulating someone's curiosity triggers the brain's reward system, which helps the individual engage in deep learning<sup>1</sup>. Recent studies in educational economics show success in this philosophy in K-12 learning<sup>2</sup>, and the above neuroscience literature suggests a similar philosophy can be successful for students in higher education as well. In addition, I am a strong proponent of experiential learning whenever possible. Economic concepts can often be abstract and inaccessible. I overcome these barriers by engaging students with connections to their own experiences as well as other academic disciplines.

My first experience designing and instructing a course was Introduction to Statistics in the summer of 2021. Most students enter a Statistics class with a misconception that the topic is dry or uninteresting. Because of this, stimulating curiosity and using experiential learning were vital in engaging students and inspiring deep learning. An additional challenge was that the course was instructed online over Zoom, which can often make students feel mentally distanced from the course as well. To engage students from the beginning, I had students fill out a brief questionnaire. This questionnaire asked various questions about the student's interests, beliefs about statistics, and life experiences. In addition, I presented them with choices from popular behavioral economics paradigms (for example, Tversky and Kahneman's Jacket and Calculator problem). Throughout the course, I would use (anonymous) data from this survey to inform practice exercises. For example, when studying hypothesis testing I was able to have students test the hypothesis that the framing in Tversky and Kahneman's Jacket and Calculator problem had an effect on their answers. In studying regression analysis, we performed regressions where the response variable was the student's aversion to statistics on a 0 to 100 scale. I believe these exercises were extremely helpful in keeping students engaged with the topics and produced a more fruitful learning experience as a result.

<sup>&</sup>lt;sup>1</sup>Gruber MJ, Gelman BD, Ranganath C. States of curiosity modulate hippocampus-dependent learning via the dopaminergic circuit. Neuron. 2014 Oct 22;84(2):486-96. doi: 10.1016/j.neuron.2014.08.060. Epub 2014 Oct 2. PMID: 25284006; PMCID: PMC4252494.

<sup>&</sup>lt;sup>2</sup>Alan S, Mumcu I. Nurturing Childhood Curiosity to Enhance Learning: Evidence from a Randomized Pedagogical Intervention. 2022 October 15.

My second experience in instructing a course was in Intermediate Microeconomics in the summer of 2022. This course is typically viewed as one of the more challenging courses in the undergraduate economics program. This perception largely stems from the degree of abstraction that is present in such a course and the course's quantitative requirements. Thus, at every step, I sought to bring the course's abstract concepts to life. A key example of this was during the last week of the course, which focused on game theory. To pique the students' curiosity, I had them play a series of live classroom experiments against one another (for example, various prisoner's dilemmas, coordination games, and the centipede game). After having them experience the games firsthand, I then derived the theoretical predictions of best-response and Nash equilibrium in the games analytically. We then compared these results to the results of their experiment, and either discussed possible reasons for any deviations or appreciated the predictive power of the theory. For this course, I also utilized two forms of instruction. Most classes would begin with a more classic presentation of slides about the course's content, introducing definitions and theoretical concepts. The second half of each class would then go to the whiteboard, where the students and I would put those concepts to work solving various problems. By doing so, I fostered a back-and-forth relationship between the abstract content of the course and the practical implementations of this content, which I believe helped the students have a deeper understanding of the course materials.

In addition to instructing and designing the two courses above, I have also served as a teaching assistant for two statistics courses and three microeconomics courses. My main responsibility as a teaching assistant was to lead recitation lectures and to aid students in grasping the concepts taught in their main lectures. In these lectures, I created additional practice problems for students to work on, in addition to their required homework problems. We then went through these problems step-by-step together. I also helped students by presenting lecture content from a different angle than that provided by the instructor. For example in intermediate microeconomics, I spent an entire recitation going through the intuition behind the Slutsky decomposition in consumer theory, to assist students in understanding the calculus-heavy approach taken in their lectures.

In all of the settings above, I also took pride in my accessibility and communication with students. I fostered an environment where students felt comfortable speaking up if they did not understand a concept, and could approach me during office hours, after class, or via e-mail if they need additional help with the content.

I would feel comfortable teaching any course at the undergraduate or master's level. I would also be comfortable teaching PhD-level microeconomic theory and experimental/behavioral economics. At the undergraduate and master's levels, I would be particularly excited to teach any course in microeconomic theory and application, econometrics, statistics, and experimental/behavioral economics.