

Teaching Philosophy

“Math is my worst subject; I just don’t have a head for it.” “I will never see this stuff again.” “Statistics is the hardest class and no one passes.” “I don’t understand what happened in lecture today; it was all just a bunch of proofs.” Students outside the statistics major tend to feel as if they are unable to succeed in these courses, and students inside the major may like the subject but not realize the full relevance of its applications. My teaching philosophy for statistics include: promoting the subject of mathematics, engaging students during the lecture times, and facilitating student success as an effort to maintain the field of applied mathematics and statistics as an interesting and applicable discipline.

Advancing the relevance of mathematics and statistics, as a whole, must be accomplished through the use of concrete real-world examples. I have researched many applied mathematics projects and have seen statistics utilized in various disciplines including: cosmology, engineering, psychology, education, chemistry, and biology. These examples serve as a core motivation to allow students to understand the necessity of statistical methods. One of my professors, a legal consultant, inspired me to realize the need for applied mathematics in real-world problems as we discussed legal cases involving statistical methods to estimate embezzled sums. I believe that these tangible applications give a fresh perspective to the vital role of mathematics and are fundamental to the students’ understanding of what motivates the subject.

In the classroom, I consciously guide students to apply the mathematical approach to directed examples. I have discovered that the most engaging lectures are initiated with a focused example. This gives a concrete and tangible framework to illustrate the value of the mathematical or statistical idea that will be presented in a following theory or proof. Later in the lecture, I return and discuss more examples while encouraging class participation. I was particularly effective as a teaching assistant for a bio-statistics class where every example in the class was based in real biological research. In other classrooms, a bag of M&Ms can be uniquely motivating in an undergraduate class to explain statistical sampling techniques and probability distributions. These mathematical examples are a great strategy to maintain students’ attention and interest and ultimately enhance learning.

While directed examples in class can maintain the students interest, the teacher must consider personal impact he or she can have on each student. Many students outside the mathematical majors believe that applied mathematics and statistics is the hardest subject they will face in their college careers and that they are inevitably going to fail. I lectured in an atypically designed algebra class where one professor wrote standardized tests; I experienced personal success in seeing almost all of my students pass the course, many of them coming from disadvantaged backgrounds. I organized and conveyed clear lectures, assigned relevant homework, and provided the students feedback on a consistent basis. They communicated to me the progression of their skills as they worked through problems in class, turned in homework, and visited office hours. By the end of the course,

when I explained that I was not returning to lecture the next course, they requested that I remain with them because they were actually learning the material.

I believe the key strategy to teach mathematics effectively is to unify the subject matter with its fundamental need while personally motivating students through engaging classroom activities and being available. Tangible examples of current research and applied mathematics and statistics problems tend to be the greatest motivators for the subject for both major and non-major students alike, but many of the students may need personal encouragement to learn the material as well. I can overcome the stigma that students have placed on the applied mathematics and statistics fields effectively as evident in my past professional reviews and passion for the subject and students.

My desire to teach started when I was tutoring at a multicultural center for disadvantaged youths. Many of them had never even heard of college when they started but we explained about the opportunities in front of them. Quite a few were not only able to complete high school but went on to college. These are the same types of students that I taught at San Jose State University in many cases. Many of them would come to my office hours for extra help or open up about the issues in their lives. I had one student come to me about ready to drop out because of the sadness from the murder of his transgendered brother; I was able to encourage him and see him pass my trigonometry course. I will take all of these experiences and continue to encourage students for years to come, regardless of their background or views.