

### 1. Introduction

As a teacher of statistics and data analytics, I see a priority in three goals while supporting my students. I expect my students to be able to 1) adopt the least biased statistical method; 2) communicate their findings in written and oral formats using appropriate language; 3) think of the impact of their statistical work. To help my students achieve these goals, I use multiple strategies that are embedded in different pedagogies which I have developed over the years and continue to develop.

### 2. Teaching Experience

My first teaching experience was as a math teacher at high school and middle school levels in Istanbul, Turkey. Through this experience, I learned how to plan a lesson, design a curriculum and prepare homework assignments, quizzes and solution sets early in my career. Although this work was satisfying, I left my full-time teaching position to pursue a master's degree in math education in order to improve my understanding of teaching and learning. While working on my master's, I also tutored students.

During my PhD at OSU, my first teaching appointment was as a lab instructor of an introductory statistics course at the graduate level. The labs were designed to review the concepts covered in the lecture and apply the concepts using SPSS. I was responsible for preparing all lab materials including presentations, handouts, and homework assignments.

The following year I taught a course to undergraduate preservice teachers on classroom assessment, a course which I am currently teaching. It is the only undergraduate course offered by my program and was therefore the only teaching position available to me that would allow me to gain teaching experience with undergraduates and that I could teach as an independent instructor. Although I was less familiar with the concepts covered in classroom assessment than I was with statistics, I wanted to grow as a teacher by challenging myself to teach a topic that is relatively new to me.

### 3. Teaching Philosophy

**Scaffolding.** Although I use different components of different pedagogies, my teaching is heavily rooted in constructivism. For each topic I teach, I first think of the big idea that I want my students to grasp. I then assess my students' prior knowledge to ensure that they are ready for the big idea and to discover gaps or misconceptions that might interfere with their understanding. I try to create challenging problems or scenarios through which the students will experience this big idea. As they solve problems and navigate through scenarios, my students construct their own knowledge. Since experiential learning can be challenging in statistics, I often use simulations in the classroom. Once students grasp the big idea, I rely more on traditional methods such as repeating procedures, drill and practice exercises, and software mastery. I use a variety of formative assessments to ensure that my students meet the goals that I set, some of which focus on short term goals such as solving problem sets or conducting analyses using the software, and long term assessments that focus on decision making and presenting results in written and oral formats.

**Context and Relevance.** In statistics and data analytics numbers are not just merely numbers, they have context. I encourage my students to always understand the context before looking at patterns, calculating statistics, or making predictions. Without having a profound understanding of the context, students can be misled into number crunching or focusing only on certain statistics while missing the

bigger picture. Conceptual modeling and statistical modeling both find a place in my classroom. Thinking of conceptual modeling also gives students an opportunity to think of the social impact of their work.

One way I support my students to think about context and maintain their attention in class is to use datasets, research articles, and newspaper articles relevant to their life and interests. For example, I use multiple datasets from different fields such as kinesiology, education, political science, and medicine which serves to capture students' attention but also provides them with the opportunity to observe statistics and research within real life applications. When the topics covered in statistics class are relevant to students, I have found that they become more passionate about statistics.

**Learning community.** Through community building, I try to create a positive learning environment where each of my students feel safe and valued. The community building strategies have both academic and social components. For the social component, I want to make sure that students feel comfortable. First, I make every effort to learn all of the students' names on the first day of class. This develops the students' sense of belonging in the classroom and promotes a safe place for students to ask questions and contribute ideas. I use my own background to build a sense of social belonging. I openly share the fact that I was a first generation and an international student in college. I ask my students their preferred gender pronoun and ask them to share if they have any religious preference that would affect their learning in class, such as certain prayer times or religious holidays. Through creating an inclusive classroom, I try to make the field of statistics more accessible. One of my students started a PhD in my program, and another who was already doing a PhD in a different program started a graduate minor in my program. Both of these students expressed that my class had an influence on their decision.

I emphasize that mistakes are always welcome in the classroom and put my students in charge of each other's learning by encouraging them to ask questions to a neighbor before they can ask me. If I answer a question for anyone in class, that student is then in charge of explaining the solution to others in class. This approach means that early in the semester, collaboration among my students flourishes and the positive relationships built in my classroom continue even after the semester is over. As a teacher, I never doubt my students' social or academic capabilities and I do not let them doubt themselves. The academic component of the learning community is often reflected in students' evaluations. For instance, as one student commented in a course evaluation, *"When an instructor is clearly dedicated to creating a positive and supportive classroom environment, it's easy to feel motivated to put forth your best effort in the course. She was not critical of students who made mistakes, so I and other students could feel confident about answering in class."*

**Room for improvement.** I try to be in supportive networks to improve my teaching. For instance, I follow the Isolated Statisticians listserv, a mailing list aimed at bringing together statisticians at liberal arts institutions, to have an understanding of what questions arise and the practices that exist across different colleges. I attend teaching related sessions organized by the University Center for the Advancement of Teaching at OSU and the Center for Teaching and Learning at Denison University. Through these events, I am exposed to different teaching practices across disciplines and get ideas from outstanding teachers. Lastly, I benefit from the smaller network within my department where my colleagues generously provide feedback. While benefiting from these networks, I try to support other teachers as well. I share my teaching materials with other TAs and offer mentorship. I lead roundtables at teaching focused departmental events and I work as a facilitator at OSU's university-wide TA orientation. I plan on continuing to improve my teaching skills while helping others to do so as well.