

My experience as a UTA for the University of Arizona Mathematics Department has increased my engagement with mathematics as a subject in many ways. First of all, my experience as a UTA increased my existing understanding of mathematics education as constructive endeavor. That is to say, while I already knew that a strong mathematical background is needed to succeed in difficult math courses, I learned that one of the primary causes of frustration for students who are attempting learn mathematics is that they have trouble applying previous fundamentals to acquire a comprehension of complex concepts that build on these fundamentals.

To this end, second of all, through the UTA program, I enhanced my ability to develop a pedagogy that encourages relational thinking, i.e., contemplation how different aspects of mathematics inform and cohere with each other into a bigger picture. Third of all, my experience as a UTA humbled me by requiring me to establish a stronger patience when engaging with students who struggle with mathematics. Fourth of all, my experience as a UTA exposed me to the, often overwhelming, intricacies of being a mathematics educator such as: receiving contradictory feedback from students, evaluating others' fairly and consistently, and communicating with other about non-intuitive abstract ideas.

One of the biggest difficulties I experienced as a UTA was tutoring students in vector calculus in the Mathematics Teaching Laboratory. Initially, this was because I had not studied vector calculus in a while, so I was uncomfortable engaging deeply with the course material, and therefore also teaching it to others. However, I was able to turn this this into an opportunity to revisit my understanding of calculus in higher-dimensional spaces. In this way, working as a tutor in the Mathematics Teaching Laboratory improved my academic performance.

Nevertheless, even as I began to reclaim my vector calculus proficiencies, another challenge appeared: being able to explain how to understand calculus in higher dimensions— especially for concepts that are difficult to visualize or otherwise represent physically. I learned to deal with the challenge by approaching vector calculus problems from different angles simultaneously, and asking my students to do the same. Thus, by working in a Mathematics Teaching Laboratory, I discovered the importance of advocating relational cognition: interpreting the same mathematical circumstance by drawing from variety of other knowledge sources.

While the UTA program did not particularly increase my confidence – because I already am rather confident about my mathematical abilities – it certainly humbled me in numerous ways. Specifically, there were times throughout the semester when students in my differential equations class would asking me brilliant questions about the subject material that I had a tough time answering. During these moments, I was forced to grapple with the fact that, despite how much effort I have already put into my development as a mathematician, I still a have a lot more to learn, especially from those who have spent more time studying mathematics than I.

Moreover, I gained an appreciation for necessity for collaboration within the field of mathematics. For instance, different people have different learning styles and internal motivations, and so as an educator, I must to rely on the my coworkers' talents to express certain mathematical concepts

and inspire interest in more effective ways than I might be able to. Hence, the UTA program compelled me to value the diversity in thought and practice that anyone who uses mathematics brings to the table.

One of the most enjoyable experiences within the UTA program was the opportunity to develop, design, and deliver a presentation on a mathematics-related topic to my peers. By participating in this project, I was driven to answer the following questions:

1. How do I introduce my peers to a relatively complex topic, that was not easy for me to wrap my head around, in a short period of time?
2. How do I convey my enthusiasm about a particular aspect of mathematics to my peers, who many not share the same interests as me?
3. How do I convey the importance of my chosen topic to someone who may not currently have the requisite knowledge to thoroughly understand it?

Upon completing this presentation, I received valuable feedback from both my mentors (Dr. Gabriella Jaramillo and Dr. Lidia Mrad) and my coworkers regarding my abilities to present new information properly.

In conclusion, I strongly recommend students apply to the UTA program offered by the University of Arizona Mathematics Department. I am confident that anyone who participates in this program will progress both academically and professionally to a high degree. Similarly, participants will spend time interacting with other accomplished and motivated mathematics students, which will help their personal development. As with all opportunities, the more work you put into your UTA experience, the more you will get out of it—and the more your students will appreciate having a great role model.