

Statement of Teaching Philosophy

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Summarized in a single concept, I believe mathematics education should be rooted in the real-world contexts to which each skill applies. My academic background is in corporate strategy and data analytics, which are subjects that are inherently interdisciplinary and rely heavily on a strong foundation in different branches of mathematics. This has shaped the way I teach my students because I know firsthand that math doesn't exist in a vacuum. The future engineers in my class will never be asked to complete a worksheet as a requirement of their engineering job description, so why should that be the primary deliverable in my classroom?

Whenever I can, I aim to infuse my teaching with project-based learning to develop context and provide students a structure in which they can guide their own exploration of a topic. For example, in learning right-triangle trigonometry, my students designed wheelchair ramps for different locations on our campus according to the ADA legal regulations. Students studied the laws dictating wheelchair ramp requirements, modeled their designs using CAD software, and pitched their designs using public speaking best practices. When students learn in this way, I believe that even the students who have never felt confident or successful in previous math classes can find a touchpoint that engages their curiosity in the subject.

Because of my background in data analytics, I believe that measuring progress and results in the classroom is both a quantitative and qualitative process. My students' and my success are not dictated by a single score or number. My biggest indicator that I have

succeeded as an educator is my student's academic efficacy self-assessment. Between four and five times per year, I ask my students to rate their confidence in their ability to learn new mathematical concepts on a scale of one to five, and I track their responses over the course of the year. Last year, my students' rating moved from an average of 2.4 out of 5 to 4.1 out of 5 by the end of the semester, and I believe this finding says more about my students' growth and my growth than any standardized benchmark ever could. This represents only one of many ways I track data and utilize it to inform my instruction.

For many of my students, some of my teaching practices are radically different from their previous math instructors'. So, it is important to create buy-in built on a foundation of trust. Relationship-building is at the heart of successful project-based learning, which is why it is also integral to my teaching philosophy. I strive to learn details about my students' lives so I can get to know them more holistically, rather than base all of my knowledge solely on their performance in my class. This approach aligns closely with the teachings of Fay and Fay, who advise building relationships rooted in high expectations and compassion (2016). This looks like meeting students where they are emotionally and socially, not just academically. As students today are avid social media users and have grown to prefer electronic communication over verbal communication, I provide my students many different avenues for communication, including texting, emailing, and, of course, meeting one-on-one, per the research of Carr, et. al. (2021).

My goal for all my students is for them to leave my math class feeling confident in themselves and prepared for their next stage in life, whether math is a part of that vision or not. Every decision I make is a means to this end, from how I structure my projects, to how I configure my classroom.

References

- Carr, J. M., Rogers, K. S., & Kanyongo, G. (2021). Improving Student and Faculty Communication: The Impact of Texting and Electronic Feedback on Building Relationships and the Perception of Care. *Research in Learning Technology, 29*.
- Fay, Jim, and Charles Fay (2016). Teaching with Love and Logic: Taking Control of the Classroom. *Love and Logic Institute, Inc.*