

STATEMENT OF TEACHING PHILOSOPHY

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When I reflect on teaching mathematics, I always come back to the same core realization: Mathematics is fundamental to all we do, yet is often misunderstood. By this I mean to point out that while all topics intertwine in the pursuit of knowledge, mathematics is often an underlying base that many students are either intimidated by or do not enjoy. This idea is what drives how I develop my teaching methods and those strategies that I find most central to my students' success in mathematics. I believe that the method of communication, understanding mathematics as a language, teaching mathematical intuition, and stimulating interest in the subject are the backbones of showing mathematics to be the valuable, as well as beautiful and exciting, tool it is.

Possibly one of the most important aspects to teaching any subject is the method of delivery used for instruction. It is very important to consider that what might be the easiest method for the teacher may not be the best method for the students. As an example of this, I transitioned most of my courses to a guided notes style that my students have often preferred. I implement this by making the shell of my notes before the course starts, making it available to students, and then utilizing document cameras or digital writing tablets to lecture in class while filling in the notes. I have been pleasantly surprised by how this method has increased student engagement.

Open dialogue is vital to students learning math, especially for those classes that are not specifically for STEM majors. In teaching, it is very important to set aside time during each lesson to offer a discussion about previous examples or homework problems that students may have found challenging. While this may seem to be a daunting task with the multitude of topics to cover in one semester, I think we should attempt to allow time for students to not only ask questions, but also discuss what they got for an answer and how they may have gone astray. A strategy I have adopted to aid in this open dialogue when teaching online is creating a discussion board online for each of the sections to allow students, as well as myself, to discuss and keep track of common opportunities that arise while students work through the homework.

Another key factor to consider when teaching mathematics is the fact that at its core, math is a language, which often seems foreign to those that do not specialize in it. Keeping this in mind, it is vital to a good math education to focus on proper notation and terminology when completing homework, just as you would in any English or language class. I accomplish this through letting my students know that I will emphasize this during notes as well as on my grading and personalized feedback. This clear mathematical communication has the immediate effect of making students more comfortable and confident with math, as well as the long-term benefits of making the students less intimidated when math arises in other courses, the workplace, or life in general. This is most beneficial to those students that may think they are "bad at math," think they do not have a solid math foundation, or simply do not enjoy it.

In connection to the fact that math is a language, I try to consider the audience that I am engaging in mathematical discussions. For example, when teaching the

Business sections of math, I employ the strategy of reminding the students of what certain definitions or ideas are in simpler terms after first introductions for a longer period than I necessarily would in a higher-level mathematics course, and I have received great feedback from students concerning this strategy. In line with this I also motivate each definition or topic with realistic applications and examples. This strategy has been particularly effective in courses that are often deemed difficult, like Calculus II. I will consider the majors of the students in the class when preparing certain examples that illustrate the use outside of our classroom of the topics we cover, for example, how differential equations appear when attempting to understand laws of nature. I think this also helps bring definitions and theory down from the formidable heights of academic theory and into a more practical and friendly setting.

One of the most fundamental ideas of my teaching can be summarized easily as teaching mathematical intuition rather than memorization. I focus on being able to understand where concepts come from mathematically instead of giving identities or formulas for students just to memorize. For example, when discussing values on the unit circle, I develop where they come from and how they are related so that students do not have to memorize them but instead can discover them on their own. Or when considering arc length of functions, we work through approximating the arc length by cutting the function into infinitesimally small pieces to find the formula for ourselves. Simple things like this can not only make math seem more attainable or friendly but also improve the students intuition in other courses and life.

My final strategy for teaching is a relatively easy and straightforward one: excitement. I try to ensure my students know that I am excited about the subject, teaching, and about having them as my students. While this may seem like something small, it has great impact. As we have all been students, each of us can relate to wanting to go to a class, even if we are not interested in the subject, because the instructor makes it enjoyable. I strive to accomplish this by bringing enthusiasm to each class as well as getting to know the students so I can appeal to their interests while coming up with relevant examples or problems. Something as simple as learning students' names and one of their interests can make a big difference in engagement.

Believing that all my students can be successful in mathematics, whether they start out assuming it or not, allows me to focus on providing the best education I can. Taking the time to reflect on what methods serve my students best, how to communicate the importance and beauty of math, and providing some enthusiasm for the subject is what allows my students to be successful in my class. I hope, and tend to believe, that this approach has opened students to the wonders of the topic, and as one of my Calculus II students said on the course evaluations,

“Professor Stanfill created a healthy, engaging learning environment in which to teach. Through this and constant encouragement, he greatly (positively) influenced my view of mathematics as a subject.”