

Teaching Statement

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I love math. I'll admit it and when I am teaching I get to talk about one of the things I love most in life, math. At a personal level I have always enjoyed mathematics, solving problems, writing proofs and thinking about abstract concepts. But mathematics is very hard to share with the people around you. No one seems to want to talk about it. That's where my teaching philosophy starts. In my class, I want students to learn the mathematics, understand it for themselves and then talk their friends about it. How do I plan on accomplishing this? I start by learning about things my students are interested in. Then I try to link the activities my students are interested in with the math we are learning. I give homework and test on a regular basis. I assign the traditional practice problems but then I like to follow them with a writing to learn activity. The writing to learn activities give students a chance reflect on how we solve a problem and more importantly why we solve the problem the way we do.

In the classroom, I create an open and active learning environment. I ask students to start talking about math by giving students the chance to discuss problems with their neighbors. This discussion opens an exchange of ideas that makes the classroom a comfortable place to ask questions and learn. When we reach a solution or a really great question, I have the students present at the board. Having students present their work on the board is a great learning tool. Not only will students come up with different ways to solve and present the problems but occasionally we will get someone who will write a believable but wrong answer. That is when the class really gets to learn and test themselves on the mathematics we have learned. When students always see the teacher presenting right answer after right answer on the board, they don't know what to do when they get home and take a wrong turn on a problem. Letting students discuss the problem in these ways helps them learn where the wrong turns are and, more importantly, why they are wrong turns.

As the instructor, it is my goal to communicate mathematics. When I make an assignment, I assign a few problems for students to practice the concepts we learned in class. Then I assign a few problems that will test their understanding of the concepts we learned in class. More importantly, my homework assignments are designed so that I can see what the students are learning in class, provide beneficial feedback on their progress and properly gage my lectures. I believe students have a responsibility to learn the material on their own time but I also believe that I have to responsibility to make sure I am communicating the material clearly. I am always trying to improve and expand my teaching style. I am always looking for students suggestions on how I can better communicate the material to them. Often I will have prepared more than one way to explain a problem. The alternative solution benefits both the overachievers in the class and the underachievers. For the overachievers, it tests their understanding of the problem by offering a different approach. For the underachievers it offers an alternative solution that they may understand better.

Of course the most fun part of teaching mathematics is writing math problems for your students. Many students often complain that they do not see why they have to take a math class for their major. So in the first week of class, I ask the students to reflect on why they are taking this class. Then I try to get them thinking about the math around them. Riding bikes is one of my hobbies and an activity that most students can relate to. When I teach calculus I cannot help seeing all of the mathematical relationships involved in riding my bike, the mean value theorem, max/min problems, acceleration and deceleration. Once students start seeing the that math is all around them, they start thinking about the concepts they learned in class and understanding why math is an important part their education.

My teaching style is dynamic and focused on communication. I believe that any student can understand the basic concepts and excel in under the right circumstances. To motivate the students to learn mathematics, I offer multiple explanations and real world examples. I teach each coarse with an enthusiasm for math that I hope my students will take with them after they leave my classroom.