Teaching Statement

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Both of my parents are teachers so I learned early on to appreciate teaching and value the hard work it requires. My first so-called teaching experience started when I was in high school where I coached soccer. In college, I volunteered to tutor math to Upward Bound students and I continued to coach. These experiences made me realize I wanted to be an educator.

During the past eight years of teaching, I have been flexible and open to new teaching approaches and I have continually reviewed and revised my teaching style and methods. In this statement I convey the goals I have as a teacher and the four components I think are needed to be an effective educator.

Goals

As my first priority, my students should master the skills required for the course in order to be successful in their future. Secondly, I challenge my students to think. I encourage and motivate my students to extend the basic concepts from the course and incorporate them into real problems. Lastly, I want my students to come out of my class with a greater appreciation for math. Several techniques and tools are available to help achieve these goals. Good teaching requires serious preparation, flexibility, careful evaluation and feedback, awareness of technology and its usage, and keeping the students’ interest.

Preparation and Flexibility

Preparation for the whole course in addition to daily preparation along with flexibility is imperative to achieve the goals of a course. Before the course begins, I outline a daily course schedule to help guide me and the students. I organize the daily discussion questions and create handouts before each class. Good preparation allows me to focus more on my students and their understanding. In addition, choosing challenging and appropriate questions for group work leads to good group interaction. Because each day and each section of a course is different, it’s important to be flexible to match that particular class’ needs. For example, for many of my students in the Statistics course I taught at Hawai’i Pacific University, English was not their first language. I focused more on writing down everything I said to ensure they understood the concepts.

Evaluation and Feedback

Evaluation is done at a variety of levels whether through responses in class, homeworks, projects, or tests. For each of these, immediate feedback either through giving a test back in the next class or praising a student for a good response in class helps students learn. Because I teach Business Calculus in reform style students read the material before they come to class. Questions I collect from them each day help me to assess their understanding. By asking questions during class students are constantly being evaluated and given appropriate encouragement and feedback. Along with daily evaluation, some sort of testing is necessary whether oral or written to make sure concepts are ingrained. I also think homework and projects aid in student development. They provide an opportunity to ask more thought-provoking questions that lead to critical thinking. I give a couple larger homework assignments with more challenging questions to see if they understand the concepts rather than just methods. I design projects that enhance the course and benefit the students. For example, in Games and Graphs each student presented a card trick and described the mathematical basis behind the trick.
Incorporation of Technology

Depending on the goals of a class, technology tools such as graphing calculators and computers can help in understanding concepts. For example, in Business Calculus we explored definite integrals using Riemann sums as estimates. Then as we moved to more involved problems, we used the graphing calculator to compute the definite integral for a given formula which allows students to focus on the interpretation of real problems. They also built an amortization table using Excel to find out the true costs of buying a house. When I team-taught three weeks of a freshman seminar course, Origins of ORDER, students used MATLAB to restore images. The internet can also enhance class. All classes benefit from having a web page to improve communication between the teacher and class. For instance, I post all assignments and daily classworks. More realistic group projects are also facilitated by the internet. For example, my Introduction to Math class used the internet to find a house they wanted to buy and then had to research banks to find out reasonable interest rates for mortgages.

Keeping Interest

There are three key aspects to keep students interested and motivated. The first is to make the class challenging yet not impossible. I get to know my students’ abilities well in order to determine the correct difficulty level. The second is to have as many real applications as possible. For example, students in my Introduction to Math class at Appalachian State University used surveying tools to measure the height of the bell tower and then determined how much paint was needed to paint the tower. They learned to appreciate some trigonometric identities rather than just being forced to memorize them. The third way to hook students is with enthusiasm. I love teaching and sharing my excitement about math. When the students see me enjoying what I do, they can’t help but enjoy it too.