Teaching Statement
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As students move into college, their focus is on the future. While in class, they are synthesizing information with the purpose of preparing for or deciding on a career. Thus it is vital for a post-secondary classroom to provide students a place to explore the beauty of mathematics in its own right and learn how to apply their skills to their respective fields. My classroom will be centered around community, collaboration, and open communication, allowing students to gain new perspectives on the material through their peers. I will create a constructive classroom by encouraging risk taking and curiosity, leading student-driven discussions and group work, and continually reflecting on my practices. My students will leave my classroom with a greater understanding of mathematics and the role it plays in their future.

A Working Community

Since my students are preparing for life-long careers, I will model my classroom after a working community where students will find themselves surrounded by collaborators with unique perspectives and positive contributions. Currently, as a recitation leader, I create this environment by having students primarily work in groups. I encourage students to ask each other questions and communicate about the material. At first, students are hesitant to use each other as resources. So to ease the transition to group work, I redirect their questions to the group and scaffold the discussion so students begin to understand how to collaborate and overcome struggles together. Having students answer their peers’ questions and providing meaningful group activities, allows students to become more comfortable working in groups. I know that my classroom is successful when I hear constant communication centered around the material and recitation worksheets. The collaboration skills that they learn in my class will serve them well in their future careers.

Individualizing Large Lectures

One aspect of the post-secondary classroom that I have come to appreciate is the range in academic diversity. I enjoy the unique challenge of not only meeting every student at their current level of understanding but also maintaining this closeness to encourage and push students in the direction they wish to grow. In a smaller class, I will address this challenge by maintaining open communication with my students and periodically checking in on the progress of their goals.

In larger classes, it becomes of greater importance for students to invest in one another. While I want my students to build relationships with each other, I also want them to work closely together and develop a community in which each student helps their classmates succeed. One way that I will develop group learning is through ‘level up days’ in which the primary goal of the class period is for the students to help each other gain a more complete understanding of the material. As students work in small groups, I will walk around and answer each group’s questions; providing a more intimate interaction. At the end of these classes, each student will submit a short paragraph explaining one new concept that they learned during the class. From these submissions, I will generate a collection of student responses that explain the main ideas of the course. This document will be beneficial for students to review the material in the words of their peers. To ensure all students participate I
will use Canvas discussion boards, or a similar program, to collect the assignment. Having students work in smaller groups and creating a more intimate learning community will encourage students to actively participate in their education. Students will begin to view the classroom as a unified experience to help them understand mathematics and gain a greater understanding of the goals they wish to set for their futures.

Reflection

Another important part of teaching is the process of reflection and growth. In my classroom, I take a listening stance and strive to learn from my students. The two main ways I do this are by immediately changing a lesson during class in order to facilitate students’ understanding and by adapting lessons for the following term by reflecting on how well students responded. A day-to-day adaptation may include helping my students understand new material by connecting it to prior knowledge. For example, in Algebra and Trigonometry for Calculus, my students were uncertain about how to find amplitude, phase shift, and period from an equation and vice versa. In order to help them better understand this concept I reminded them of graph transformations which they learned in the previous chapter. By helping them connect the current material to what they have already encountered, the students were able to more quickly identify how the trigonometric graphs were transforming and identify the parts of the graph. These daily interactions, and close monitoring of students’ progress, allow me to help my students more effectively.

From semester to semester, I continually adapt my teaching to push my students, and myself, to grow. For example, during the first semester of teaching Calculus II, I noticed that my students were having trouble visualizing rotations of two functions around an axis. The second time I taught Calculus II, I decided to make color-coded clay models in order to help my students better visualize what was happening. By slicing the model in half, students were able to see the graphs “before rotation” and the inner vs. outer boundary of the graph after rotation. These models served as a nice tangible option to help students visualize the problem. After further reflection, I would like to use Maple to allow the class to make multiple examples and visualize what is happening through the process of rotations. In addition, a 3-D printed model would provide a good physical example. By constantly pushing myself to consider how I can better facilitate my students’ growth, I myself grow as an educator.

Beyond the Classroom

My inspiration and enthusiasm for mathematics extends far beyond the classroom walls. Formally, this involves helping with events such as UK Math Day for Women and Math Circle, and presenting at Math Club. At these events, I enjoy meeting students from many grade levels and learning about their passions. It is important to not only encourage these students to continue to explore, but also to engage in activities with them to demonstrate that math is about asking questions and struggling with understanding. In addition to attending these events, I find informal outreach to be of great importance. Whether on an airport bus or on top of a mountain, speaking to budding mathematicians is truly inspiring. I can see the blissful smile of passion when these students express their joy for mathematics and realize that I share the same love. It is at these moments that I know encouraging them to explore their passions means the most. Throughout my career, I hope to continue to engage in meaningful moments such as these.
It is already apparent that teaching is an extremely rewarding profession for me. My classroom will help students gain the collaboration and communication skills needed to move toward their future goals. As a teacher, I am not only in the position to aid students in their understanding of math and the role that math plays in their future, I am also in the position to learn more about myself. It is the ability to be experimental, critical of my effectiveness, and flexible in growth that allows me to continually modify my classroom to fit the needs of my students.