Suzanne Crifo | Teaching Statement

I teach for the lightbulb moments. Those moments do not discriminate; both a student who has always struggled with mathematics and a graduating math major have moments when that elusive concept is suddenly made clear. These moments are contagious. The student usually turns to his or her friend in the class to share this new found knowledge. My facilitation of the student's realization energizes me, encouraging me to challenge both myself and my students to have more such moments. In this way, I view teaching as a transformative process for all involved.

I believe that students learn best, and so have the opportunity for lightbulb moments, in a comfortable and inclusive environment. I begin by including a statement in my syllabus about diversity, community, and recognizing the dignity of each individual. I recognize that the students that come to my classroom all have different backgrounds and different expectations, which may not align with my expectations. In order to ensure that each of my students has the chance to succeed, I work to make my own expectations as clear as possible. I explain that I appreciate when students come to office hours. Not only does it help me to determine how to best help individual students, but I've also found that students are likely to have those lightbulb moments while in office hours. This is especially true in the larger classes that I teach; after attending office hours, students become more familiar with the material and me and are more likely to volunteer in the larger class setting.

Both my classes and office hours are very interactive. My students learn quickly that I expect them to participate in the lecture, creating an open environment in which they can ask questions or add insights at any time. In some cases, I have the students lead the discussion. For example, rather than summarizing in lecture format the equivalent ways one can show a linear map is an isomorphism, I turned the question to my Linear Algebra class. One by one, the students volunteered ideas and we compiled a list of equivalences, connecting ideas from throughout the semester. While this worked well with fewer than 50 students, I have found other ways to encourage active learning in my larger classes. In the Calculus for Life and Management Sciences course I am currently teaching, I use the think-pair-share strategy, giving each student an opportunity to share his or her thoughts. I encourage collaboration among my students, not only because I found it rewarding as a student, but also because working with others is an essential skill. However, this is another area that I have come to realize some students have experience with while others do not. To help the latter, I ask students to email me if they want to find a study group. I can either form groups containing those students who emailed me, or I will give them a "script" to use to reach out to their peers.

In every class I teach, I explain that the successful student should be able to develop problem-solving techniques to formulate and formally present arguments. I emphasize how the problem-solving skills that one utilizes in a math course can be applied outside of the classroom. For example, I assigned a semester-long project for Introduction to Linear Algebra, asking students to make connections between linear algebra and their own major or passions. Students received constructive formative feedback throughout the semester. A student majoring in Mathematics Education said that this project "helped [me] think about applications to my future classroom because I can develop lesson plans with it in mind and answer student questions better." Several of my students, in both linear algebra and calculus courses, acknowledge that the critical thinking skills they practice in these courses help them to think logically to solve problems in general. This aligns with one of my goals as a math teacher: to help students discover how mathematics is present and helpful in both academics and careers.

Since I view teaching as a transformative process for myself as well as for the students, I ask them to help me improve my teaching. In addition to the class evaluations conducted by the university at the end of the semester, I conduct mid-semester evaluations to check in with my students and determine if I am meeting their needs and delivering the material in the most effective fashion. For the calculus course I am currently teaching, I used the anonymous mid-semester evaluation to check the number of hours the students spent on the class, the grade they expected to receive, and their opinion on the frequency and length of the extra practice available and group work in class. I asked which resources they used to study for Test 1, the grade they obtained, and which resources they planned to use for Test 2. This simultaneously allowed me to collect information about the resources being used and reminded the students of all of the study tools available to them. Additionally, I asked them to share how they would improve the course. 94 out of the 175 students took the survey and of those, 31 asked to see more examples or have more practice. This helped me better plan my lessons and instruct my teaching assistants. I asked that they focus on examples and time for practice in recitation, while also planning some class time for this purpose. Giving students this opportunity for feedback not only helps me better design lessons, but also gives them a sense of ownership in the class. A few students noted this in the final class evaluation for Linear Algebra, for example "She is easy to follow and desired feedback throughout the semester - always trying to improve for us and make herself a better teacher, which I greatly appreciate."

During my time at North Carolina State University (NC State), I have served in a variety of roles: lecture assistant, recitation leader, and instructor of record. The math department at NC State has trusted me with more teaching responsibility than the average graduate student. I have been the instructor of record for seven classes and I was selected for the Preparing the Professoriate (PTP) program, enabling me to teach an upper level course normally assigned to a faculty member. I have taught classes as small as 6 students and as large as 176. I have worked with the Disability Resource Office to ensure that each of my students has an equal opportunity to excel by posting my lecture notes online prior to class and recording lectures on video. I have taught a range of students: the enthusiastic math major who stays after class to discuss one of the more challenging examples from that day, the determined student who continues to work hard despite prior struggles with math, and the reluctant learner who only wishes to complete the general education requirement. The enthusiastic math major has pushed me to think on my feet in the classroom, finding ways to challenge students who seek more than what the text has to offer. Students without a strong math background have helped me find innovative ways to convey an idea through connections with its familiar applications. Reluctant learners have taught me that it is not only important for me to love the subject, but also to anticipate potential stumbling blocks in my course and find ways to capture interest at those moments.

I constantly seek new ways to improve my teaching. I have participated in several professional development opportunities offered by the Graduate School at NC State. In workshops and seminars I have attended for PTP, the Teaching and Communication Certificate, and Academic Packways, I have learned many new tools and strategies that I have since implemented in the classroom. For example, I participated in a workshop on diverse learning styles, which discussed how students learn best when material is presented in several ways. This helped me design a lesson on finding the volume of a solid of revolution. I bring in one of the party decorations that unfolds into a cylinder, and the students pass this around and conjecture what its volume may be. The material is then presented in lecture format as well. I recognize that teaching is itself a learning process and I will continue to seek out opportunities to develop as an instructor. Specifically, I hope to participate in Project NExT, a professional development program offered by the Mathematical Association of America, once I have completed my Ph.D.