Teaching Philosophy

I began teaching in 1995 while pursuing my Masters degree in mathematics at Middle Tennessee State University. In total, I taught six courses in developmental mathematics and it was then that I fell in love with the challenge and privilege of teaching. What I learned in those three semesters is that a genuine love of mathematics coupled with the true excitement that I bring into the classroom is extremely effective in capturing students' attention. The years that followed the completion of my Masters degree, I taught courses in College Algebra, Finite Math, and Business Math at Nashville Technological College. What I took from that experience was the discovery that although I enjoyed teaching at this level, I desired to learn more mathematics and experience teaching higher level courses. It was not until I began my doctoral studies at the University of Kentucky, that my journey as a teacher accelerated. One of the strengths of the University of Kentucky's graduate program in mathematics is providing the opportunity for the graduate students to teach a variety of courses from many levels. I took advantage of this opportunity and learned the importance of cooperative learning, regularly graded homework, and availing myself outside the classroom.

In my second year at UK, I participated in Math Excel, UK's version of the University of Texas' Emerging Scholars Program. This program was designed for talented students as well as disadvantaged students to *do* Calculus I and II in an intensive learning environment. The students commit to a year of the program where they meet in small groups for six hours a week outside their three lecture hours to work challenging problems. The problems were compiled by me and were intended to stretch the students beyond their regularly assigned homework. Although, I designed the worksheets and facilitated the classroom, the learning in the workshop happened mainly in the groups by the groups. They were guided to answer questions among themselves instead of relying on the teacher for their sole resource. As the year progressed, the students in the workshop relied less on me and more on each other. As I know in my own graduate study, they learned the invaluable benefit of group discussion and activity. A challenge I am undertaking this semester is fostering a cooperative learning environment inside a lower level math course.

Students learn mathematics by *doing* mathematics. Doing means practicing skills both inside and outside the classroom. Required homework is imperative to insure the greatest chance of success in mathematics. I have learned and relearned that if homework is not required then even the best intentioned student will often do only the minimal for understanding or worse, nothing at all. This is not a weakness of the student, but rather an exercise in priorities. As students, we prioritize things based on when they are due and there is always something due. Thus, suggested problems fall to the bottom of the list. If the problems I assign are due, then they become a priority. Homework needs to provide avenues for discovery but also repetition of ideas to help solidify concepts. There also needs to be time in class for students to *do* mathematics. There is a huge difference in understanding while one is watching someone work a problem and being able to work one independently. My lecture hours are divided into lecture, ample examples, and independent work.

As well as holding regular office hours, I am willing to work with students who are willing to learn. Last summer, I taught a course in Differential Equations. It was a tough course for my students both in material and time constraints. There were seven to ten students in the class that met with me regularly outside of class. We generally met for an hour before class and often two hours after class every day. Although this was time consuming, I became caught up in their desire to learn the material and their willingness to put in the time. I will match my students' honest effort to learn mathematics. They appreciated my commitment and thus, offered theirs. This task is harder to achieve in lower level courses. Clearly it is easier to excite a student who already has developed an interest in math than someone who believes math is not her strength. Of course this is the great challenge and task of a teacher.

Recently, I was asked to lead a small group of incoming teacher assistants in a Micro-Teach workshop. After meeting with me for two sessions, they were asked to give an eight to ten minute presentation to the group. The purpose of this workshop was to ease them into a teaching role and to guide them into effective teaching strategies. Before one of our discussions, I made a list of effective teaching qualities to bring into the classroom everyday. They are, in no particular order, be passionate, be prepared, be knowledgeable, and have clear objectives for the day. When you are all those things, the students are likely to respond. They will have respect for you, your knowledge, your chosen profession, and your time. The rest is up to them.