TEACHING STATEMENT

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Teaching is about inspiring thirsty minds to pursue, discover, and appreciate knowledge. It is more about teaching how to learn rather than just transferring knowledge. I have come to realize that I love teaching and my goal is to become an effective math teacher. Throughout my student life, I always thought that the best way to learn mathematics is by actively participating in lectures and recitations. It worked for me, it has worked for many many others, and therefore I try to implement a similar teaching philosophy. I have implemented this as a primary instructor at universities in Albania for 2 years even before coming to U.K.. Now as a T.A., I can simultaneously experience both sides of the coin, and as a result my beliefs in this philosophy are stronger than ever. At U.K., I have experience as a recitation leader as well as a primary instructor for a variety of classes. The diversity of these classes, students, and all experiences in general have evolved my teaching strategies, which I will discuss below.

My classroom is a living organism where everyone is expected, but also encouraged, to ask questions, answer questions, to help fellow students, to get help from fellow students. I am aware that some students might have a timid nature and tend to stay isolated. To address this, I create small groups and mix them up accordingly so that the classroom stays always vivid. I am also aware that some students might have difficulties asking questions. I always say to them that there are no bad questions. Even the seemingly most superficial questions will send you a step closer to the solution. I spend a lot of time and energy at the beginning of each semester to empower collaborative learning. Students are asked to think about problems on their own for a while and then discuss the ideas within the group. Even if students struggle, I never give the solution quickly and for free. Rather, I build up a step-by-step solution and ask questions that will lead students to independently figure out the solution. Once they succeed, their joy and self-esteem will peak and they feel more confident in their mathematical abilities. I have found that guiding the students to discover the solution on their own leads to a deeper understanding of the material.

I believe it is very important to know the diversity of students that are in the classroom. It starts by knowing their majors, and as the semester progresses, knowing their strengths and struggles. In this way the teacher could try to empathize and help the students to blend in. I tell them stories about my own struggles with research. There is nothing wrong to get frustrated with particular problems as long as you find the strength to refocus on it and come back even stronger. With this approach students come closer and closer, they visit my office hours, they even joke about my favorite soccer team or my accent. They think of me as one of their own. This creates a relaxed and inviting classroom environment where I have the chance to understand their difficulties. This helps me to prepare strategies for upcoming classes that will enable students to overcome their barriers.

It is very important to realize that many students do not feel the same as I feel about math. Even worse, many students think that math is nonsensical and thus impossible. Every math teacher has to deal with these kinds of situations. The solution is to make the students feel involved, to give them the bigger picture rather than mechanical explanations. At U.K. I heard for the first time about LIATE and SOHCAHTOA. Every student was aware of these type of acronyms. Even though they might be a good tool to be efficient, I think that they deprive students from the whole picture. I always spend some time to explain why they work. Very close to these feelings stand my feelings for calculators. It is impossible to avoid their use in the technological era that we live. However, calculators can create an unhealthy dependence so I am very careful on keeping a balance. This can be done by carefully designing exercises and ask for exact answers rather than approximations. As an example, the surface area enclosed by a circle can be computed by a calculator but it will never give an exact answer that includes π.

When I taught Calculus II and III, I made use of the autonomy of a primary instructor to not only implement and improve all the above, but also develop new strategies. I believe effective teaching
involves balancing traditional lecturing with active learning. Despite of all the math classes I have taken throughout the years and despite the fact that I love math, long proofs are difficult to deal with. It is easy to get distracted from the numerous sub-lemmas and lose focus of the main statement and goal. With this in mind, I try to put myself in the shoes of undergraduate and non-math majors and think about how difficult it is to understand new concepts thrown at you. The use of technological resources has served as an intermission from mathematical symbols, abstract concepts, and long proofs. It is important to pay attention to students’ reactions and slow down if they seem lost or tired. Sometimes I would follow up with a short pep-talk about the importance of the topic in session, and sometimes I would follow up with real life applications and/or curious facts related. This makes my lecture more approachable to students.

Another strategy I use in my lesson is geometric visualization. I believe this gives more intuition and helps students to better understand abstract concepts and equations. To this end, I spent a lot of class time drawing pictures and simultaneously explaining the transition from equation to picture. The connection of definite integrals with areas is a good example. This turned out to be helpful in my Calculus II class. I went a step further in my Calculus III class and used graphing and other computational software. It not only helped students to visualize concepts like the movement of a particle following a given parametrized trajectory or approximating volumes with thinner and thinner Riemann sums, but also familiarized them with available technology and resources. It also helped me to better approach and explain more abstract equations like the curvature or the tangent vector. With this strategy it is also easy to jump back and forth from lecturing to active learning. Often I would end my lecture with a group discussion about previous, current, or upcoming topics. The outcome was actually very surprising but at same time very promising. Every day after class the students were full of follow-up questions as well as with genuine curiosity about real life applications.

Being a T.A. has served as a very fruitful transitional stage from student to teacher. I had the chance to be observed by dedicated teachers, and I make use of their comments, suggestions, and criticism to grow as a teacher. I take very seriously evaluations from both students and observers. It has not only helped me to spot and then work on weaknesses I might have, but to also gain confidence in my strengths. It has helped me to better approach diverse classes. It has helped me to view teaching from a student perspective. It has helped me to better manage students with different backgrounds and how to keep students focused and motivated during the entire semester.

I strongly believe that the above-mentioned strategies will enable my long term goal to become an effective math teacher and excel in my profession; however, I realize learning how to effectively teach is a perpetual, growing process. I am excited to continue this process at a new institution.