Teaching Philosophy Statement

By Andreas Artemiou

Teaching is not a job, it is a “ministration”. It is a service to every student in my class. And this is how I treat it; with all the respect that my students deserve, and all the respect to the one that trusted me in that position deserves. I have taught for 6 years, undergraduate statistics courses (mainly for non-statistics science majors) and the last two years as an Assistant Professor, I have also been teaching a graduate course in computational statistics. My primary goal is to transfer knowledge that I have learned through my college years (and beyond) to my students.

My ideas on how to teach a class, depends largely on the audience that I have, but are mainly influenced by three major beliefs I have about teaching. The first one is the fact that students are responsible adults and should be treated as such. Students in lower level classes, freshmen and sophomores, most times need to be forced to study (by giving several assignments and homework) especially, for classes that are not in their majors and they take them to satisfy general education requirements. On the other hand, juniors, seniors and graduate students should be in a position to identify the material which needs more time to deepen their knowledge and the instructor should allow them to do this. Secondly I believe that most of learning in science occurs outside the classroom, either by reviewing the materials and looking at other references, or by solving exercises and applying the methods they have learned in class. Lastly, the classroom is the place where students first experience the material so they must be as little distracted as possible, and should be as active in the discussion as possible.

The three beliefs above are exactly where I am focused when developing a course that I will teach. Starting from the third belief this is how I create a lecture. I always use two sources of information at the same time. My slides are available to them through the course website, at least a week before lecture day, and are shown on the projector screen during lecture time. At the same time I am using the board as well. On the slides I have the main definitions and the steps for all the new procedures that we learn and on the board I am writing and solving all the examples, which are being solved step by step, with students’ participation. So, students do not spend time, writing down important definitions. They have them on the slides and they can focus on the explanation that I am giving. At the same time, they get involved by solving the examples. To get them involved, I give them some time to think before proceeding at each step, and I try to not call on the same names all the time. Also, if someone says the wrong answer to a question, I always take it and continue the problem, until one of them figures out that something is wrong, and corrects it. This process teaches students, easy ways to identify mistakes when solving a problem alone, for homework or during a test.

The first two beliefs also affect my style. Since, I believe that students should be treated as adults, who can decide on how much time they need to spend on a course, I am not a big fan of assigning mandatory homework. I instead give them suggested homework on a lecture by lecture basis and I test their work at least once per week, through chapter quizzes or extra credit assignments. The in class quizzes force them to study, so they do not fall behind in class, and at the same time, they allow them to organize their study without spending too much time if they feel they are ready. For example, for students who understand the weekly material and only need to do a quick review, there is no reason to force them to
work an endless number of exercises; instead they can devote that time in another class or exploring other material that they would like to explore to improve their knowledge on any subject. On the other hand, I make sure that students who need the most practice every week have enough exercises to try and work with them, in order to learn the material as well as possible. I am following this mainly in classes directed to upper class students (juniors and seniors). For freshmen and sophomores, I try to make sure they are studying, by assigning homework, while maintaining the weekly quizzes that test their ability to use their knowledge in a test situation. Because those students are new to college life, they need to learn how to study in college, understand the differences from high school, and at the same time eliminate the distractions they have from other sources in the university. Finally, graduate students get more research oriented projects which will help them develop some individual skills, that will prove helpful in the development of their dissertations.

Finally I am trying to get students more engaged by giving them real data projects. Students like to see some real data and work on them. So, for undergraduate classes, I always pick a software that I find more appropriate for the class and show how it works. Then, I give them a dataset to work with it. The datasets come from real surveys, real problems that people worked with and some of them surveys within the environment of the university. Working with this type of datasets, students not only get fascinated by finding interesting relationships between several variables but they also can see the use of statistics in real big datasets. This is important, because they see that Statistics are not primarily used for the simple examples we see in class, but rather for more complicated real life situations. In graduate classes, I follow a similar path, by attacking real research problems during teaching. I assign reading research papers and we discuss the way researchers attacked a situation in class. I expect them to take one research paper related to the class and work on it by reproducing the algorithms discussed as a class project. Asking them to do this project, makes them think critically of possible improvements of research work and helps them identify possible path to improve methods which were discussed.

There are many other actions that I take throughout the semester to keep students engaged with the class. First of all, frequent emails to tell them announcements about the class, what has been updated in the website, what is the weekly plan of the class keep them aware of what’s going on even if they have to miss a lecture. Mentioning interesting facts about famous Statisticians lives or events involving Statistics always gets them more involved. Interesting articles in newspapers get them more interested and more critical when they read an article and also more willing to discuss and ask questions about different material outside class. Learning is a tough and stressful process for most students. Maintaining a positive atmosphere in the classroom during lecture is very important. So I try in most lectures to have a small break and discuss a statistics topic of interest, as a newspaper article or an interesting story. This gives an opportunity for everyone, including myself, to relax, regroup and continue with the second part of the lecture.

My goal for the future is to find a way to convince as many students as possible that learning Statistics is not just an obligation they have in order to fulfill their coursework requirements. It is a helpful subject for succeeding in many other sciences and it is something that they will face in their future professional development. Convincing them about the usefulness of those material, will help them change their attitude towards Statistics, and we will finally reach the point where Statistics will not be another Quantitative course requirement, or in other words is not another Math course.