

## **Teaching Statement**

### Teaching experience

My teaching experience began in high school when I was working as a computer science and mathematics tutor for students at local universities in Warsaw, Poland. I must have been a good tutor because students kept on using my services and recommending me to each other.

The first experience as a classroom teacher was during my graduate studies at Warsaw School of Economics. I was hired by the Department of Economics II (there were three departments of economics) as an assistant intern. One of my responsibilities was to hold recitation sections in Principles of Microeconomics and Principles of Macroeconomics. I was not given any particular guidelines except the book that was used for lectures (Begg, Fischer, Dornbush) and indication which chapters should I cover. I had to plan the timing, design exercises, come up with homework, quizzes and midterms, grade them, and provide the lecturer with the grades in the recitation section. I had been doing it for two years during which I held recitation sections twice for Principles of Microeconomics and twice for Principles of Macroeconomics. While in Warsaw School of Economics, I also held recitation sections in Intermediate Microeconomics for graduate students.

At the University of Florida, I had three opportunities to practice as a teacher (and more as a tutor). The first of them was holding recitation sections in Econometrics for younger PhD students. This class was focused on linear models, up to instrumental variables. Since the audience was small (around 20 people) and many of them were my friends, it was easy to adjust the instruction to their needs. A part of the time I spent on reviewing material as requested by the lecturer, and the other part I spend on reviewing material requested by the students. There was a strong interaction between me and the students and this interaction was shaping the structure of the classes. Students kept on coming and requesting me to focus on topics that were particularly difficult. This suggests that my work was indeed helpful.

The second opportunity was in summer 2012 when I held workshops on “Computer Science for Economists.” I came up with an idea of this workshop partially because there were many people requesting my help with handling data or doing numerical analyses and partially because I was inspired by the Initiative for Computational Economics workshop at University of Chicago in which I participated in summer 2011. My workshop lasted the entire summer and consists of a series of lectures in which I was solving problems that students could potentially face while doing their research (my portfolio of potential

problems was already rich by then, thanks to a lot of problems I had encountered myself and even more problems I had been requested to help with). Students were encouraged to follow my instruction in class and solve the problems on their computers (most of them did that) while I was doing the same on the projector. Then, students were given homework problems which I graded afterwards. The course was intended for PhD students studying in the Warrington College of Business Administration at the University of Florida and was not mandatory to anyone. Regardless, students kept on coming.

The third opportunity was the standard requirement every PhD candidate must fulfil, that is to teach an undergraduate course. When asked about my preference on what I would like to teach, I responded that the more quantitative the class the better. Hence, I was given Game Theory. I used the book (Harrington) that was used by previous instructors but I tailored material in a way I deemed suitable by rearranging, enriching, and cutting some parts of it. My criteria for these changes were based on my experience with game theory: what parts were the most important to better understand the real world as well as academic discourse. I tried to make the class engaging, challenging, interesting, hard, worthwhile, and enriching. As a result, I received evaluations above the college average (with a trustworthy sample size). I am particularly proud of virtually unmatched scores on the amount of effort required. I interpret this as a sign that I was able to motivate students to study hard. Evaluations are available for inspection on my website (<http://narkiewicz.info/>).

### Teaching philosophy

I have been told on several occasions that what makes me a good teacher are (1) the ability to identify gaps in students' knowledge, ability to get feedback and understand what is and what is not thus far understood by the students, ability to go back and re-explain concepts that are missing in students' knowledge, as well as the belief that the only way to learn effectively is to relate to what students already know and (2) extraordinary patience and willingness to go back and re-explain concepts even several times until I am sure that students understand what I am talking about and we are ready to move on. I put particular emphasis on making sure that students provide me with an honest feedback about their understanding of the topic while I explain it. I often even go further and test student's knowledge by asking specific questions as it often turns out that nodding and confirming that everything is clear does not mean that students understand the subject the way I would like them to. I never get impatient when I am not understood. It simply means that I did not achieve my goal of getting the message across and I should try a different method. Becoming upset in this situation seems to me irrational. I believe that there must be something valuable in my approach as my tutoring students kept on coming and recommending me to each other.

Teaching is a communication process. As a teacher, I try to use symbols and notions that are already known to the students. If there is ambiguity about what the notion I use may mean, I define it. Communication is a difficult process because various concepts are understood by people differently, and using a particular word can convey different meaning for one person than for another. Thus, I try to do my best to get the message through undistorted, by constantly getting feedback and probing how my message was understood. It is not possible to be a good teacher without being a good communicator.

Being a good teacher also requires leadership skills. I try to gain students' trust and make them follow my guidance by showing clear understanding of the topic and genuine interest in their difficulties. I prefer a less formal and individualistic approach to students. This allows me to better understand their needs and obtain valuable feedback without (as practice shows) hampering my ability to judge their results fairly. Another way to achieve the role of the leader is to provide students with pleasant and entertaining classroom experience. A lecture needs to engage audience as any other show and it gives me a lot of pleasure whenever I can make my students laugh. I look up to popular science communicators like Neil DeGrasse Tyson and even to some stand-up comedians, and I try to learn from them the best ways of engaging my audience.

I do not believe in forcing or explicitly incentivizing students to come to class. I feel this is my responsibility to make the lecture interesting and engaging enough so that students want to come. If there are students whose style of learning is individualistic, that is, it is most efficient for them to study alone by reading the book, I am happy to accommodate them. If a student never shows up in the class and then comes to the examination and scores high – I am delighted to give him or her a good grade. I facilitate this behavior by providing students with scripts and notes on which I base my lectures. Both attending and absent students find them always extremely useful. Nevertheless, I try to make sure that absence of students is their rational choice rather than negligence.

Students of different backgrounds have different attitudes to learning. An example can be a tendency to study in groups versus a preference towards studying alone. Some students need a strong leadership while studying and others prefer to be more independent. Some students prefer closer relationship with the instructor, some prefer clear boundaries. Some students need classroom participation, other students prefer studying from books. I try to accommodate these different styles of learning on the individual basis, with no prejudice, so as to maximize the efficiency of learning for everyone.

Finally, I strive to make the topic interesting by relating it to real-life problems and showing how students can apply their newly acquired knowledge to better understanding of reality. Whenever it is possible, I try to hold labs or make workshops where students can gain hands-on experience in solving problems. This was visible, for example, during my Game Theory course where I arranged a few games to be played by students in the classroom and during my workshop on Computer Science for Economists where I was

giving out homework that resembled actual problems students face in real life. I put great effort on grading these assignments and giving students individualized feedback.

### Teaching interests

I really enjoy teaching highly quantitative classes. The more math is in the class, the better I feel teaching it. This is because I particularly like communicating strict logical reasoning to the students. For me, it is easier and more interesting than communicating facts. Thus, whenever I have an opportunity, I try to use quantitative examples. My wish since I was a graduate student at Warsaw School of Economics has been to teach a course in Mathematics, especially advanced Calculus or Probability Theory. The harder the topic and the smarter the students, the happier I am. Although I enjoy teaching undergraduate students, teaching PhD students is something that makes me particularly happy.

I have taught courses in Principle of Economics and Intermediate Microeconomics. But my particular interest is in teaching Statistics, Econometrics, Mathematical Methods for Economists, and Game Theory. Other classes that I could possibly teach are related to my research interests, which encompass Industrial Organization and Environmental Economics.

### Concepts for new courses

One concept I particularly like, and which I already had an opportunity to implement at University of Florida, is a course in “Computer Science for Economists.” More detailed description of this course is provided above in the “Teaching experience” section.

In addition to the above idea, I would love to teach “Programming for Economists” where I would focus on a particular programming language (e.g. C++ or PHP), or “Numerical analysis with R” where I could let students learn capabilities of this wonderful tool. These courses would be designed for graduate students and their feasibility would depend on the demand and organizational factors.

The ideas for the undergraduate courses would be based on my particular research interests, and the potential topics would include “Economics of Climate Change,” “Power Generating Industry,” and “Natural Resource Economics.” I have not devised curricula for any of such courses yet, but given there is demand from students, I will be more than happy to do so. Other classes for undergraduate students that I would be interested in teaching and which are more related to my professional experience and personal interests than to research I have done so far are “Online Advertising and Marketing” or “Banking Industry.” I think teaching such classes would be complimentary with the further research areas I would like to encroach on.