Teaching Philosophy Statement

Maksim Bolonkin

I derive my teaching philosophy from years of being a student in several different educational environments, then a teacher in various academic capacities: a private tutor, a methodist, a high school teacher, a Teaching Assistant, a University Lecturer. I learned by observing and directly interacting with multiple brilliant educators and from the mistakes of others and my own. My views on the teaching process encompass my ideas about what I am teaching, how I am teaching it, who I am teaching to, and what I am doing outside of the class.

Course content. I have designed two courses from scratch and two courses following standard guidelines. I believe that any course content must be scientifically sound, up-to-date with the most recent developments in the field, but not neglecting fundamental knowledge. Comparing a student's body of knowledge to a building, it is my responsibility as an educator to ensure that the building I help build will last for as long as possible. For that, I need to help students build a foundation or enforce the existing foundation, then construct more wings so that new wings are connected with the rest of the structure the student had built in other classes. This way, I can hope the building of knowledge will not shutter after the first minor earthquake (which is usually the first night after the final exam). This will also make it easier to develop further the expertise in more advanced classes (both for the student and for the instructor). Following these ideas, I sometimes include ungraded quizzes at the beginning of the class to better know the students and possibly some refresher lectures on prerequisite topics to bring everyone on the same page. I try to connect the course content to other relevant courses, previous and future, and real-life examples. For instance, in my "Optimization and numerical methods" course for Master students in Lomonosov Moscow State University (Tashkent Branch), I included refresher lectures on Probability Theory because I knew students came from various undergraduate programs with drastically different backgrounds. I also had a homework assignment that required students to read and implement a research paper because I believe that is a vital skill for a Master's student. I knew that they did not have that covered in their previous studies and other classes.

Teaching methodology. Teaching process strongly depends on the content and the audience. Teaching methods vary to accommodate both. Generally, I believe in a hands-on approach: the more theoretical knowledge the students can apply to some problems, the better. When possible, I would prefer an open question problem over a multiple-choice question, a project over a written exam. Understanding that students learn at different speeds, I tend to include extra-credit advanced problems in homework assignments for those wishing to try them; this helps to keep fast-learning students engaged. When designing tasks for homework assignments and exams, I try to relate them to real-world problems: in this way, students can get a better perspective on why they even need this knowledge. In class, I sometimes solve problems on the blackboard or write code alongside students and narrate my actions and thought process to make students understand that it is okay sometimes to be stuck at the solution or make mistakes as long as you can find and correct them. I learned that habit from one of my favorite professors in my undergraduate program, Shavkat Alimov. Seeing him proving analysis theorems and solving problems on the spot and not from his lecture notes made him look very knowledgeable. And observing him making occasional mistakes and correcting them, explaining his train of thought, made us believe that we can achieve the same level of excellence through hard work and persistence.

Interaction with students. I believe that students are the center point of the teaching process. They must be respected and treated as equals in all senses while respecting professional boundaries. This belief manifests in being open for questions, suggestions, respectful critique or doubt, being friendly and supportive. I am usually a proponent of an "open door" policy: students are always welcome to come unannounced if my door is open or schedule a meeting otherwise. I do not hesitate to admit that I do not have an answer to

a student's question. I try to learn students' first names because that makes the class much more personal for students (I picked up this trick from two of the best professors at Dartmouth I assisted: Thomas Cormen and Prasad Jayanti). Students do not get preferential treatment, but I follow an equity approach when distributing my time and attention: students who objectively need more help can count on getting it. Respectful interaction is important disregarding student's age, race, ethnicity, gender, sexual orientation, or social status. When I taught in 10th grade at a Lyceum in Tashkent, I always addressed my students using the form of address reserved in Russian for adults, while most other teachers used the one reserved for children. Later I found out that initially, students and their parents thought I was silly or even weird. Still, then they appreciated that I was treating teenagers as young adults deserving full respect, and that made me more trustworthy in their eyes.

Self-improvement. My experience as an educator taught me that you have to learn continuously to be a better educator. This concerns both keeping your knowledge up-to-date and improving your teaching skills. We learn from our students who can know more than us (I happened to be on both sides of such interaction), and we learn from our colleagues. I try to learn from multiple sources, including professional training. At Dartmouth Center for the Advancement of Learning, I participated in TA training and the Future Faculty Teaching Series.

In summary, I believe that my mission as a teacher is to help my students to build their castle of knowledge by providing them with relevant bricks, guiding them through a process, and creating a comfortable environment where they would feel safe and eager to keep building.

Teaching Experience

- Fall, 2020 **Lecturer, "Computational and numerical tools"** (Lomonosov Moscow State University, Tashkent Branch, Master students, in Russian)
- December, 2019 **Lecturer, "Computational and numerical tools"** (Lomonosov Moscow State University, Tashkent Branch, Master students, in Russian)
- March, 2018 **Lecturer, "Computational and numerical tools"** (Lomonosov Moscow State University, Tashkent Branch, Master students, in Russian): designed the course from scratch
- Summer, 2016 **TA, "CS50: Software Design and Implementation"** (Dartmouth College)
- Spring, 2016 Received **"Best Teaching Assistant Award"** at Computer Science Research Symposium (Dartmouth College)
- Spring, 2016 **Head TA, "CS31: Algorithms"** (Dartmouth College)
- Winter, 2016 **Head TA, "CS30: Discrete Mathematics in Computer Science"** (Dartmouth College)
- Fall, 2015 **TA, "CS083/183: Computer Vision"** (Dartmouth College)
- 2012-2013 **Mathematics teacher in 10th grade** (Interhouse Lyceum, Tashkent, Uzbekistan, in Russian)
- 2010-2012 **Instructor at preparatory courses, "Computer science"** (Lomonosov Moscow State University, Tashkent Branch, high school students, in Russian): designed the course from scratch