TEACHING STATEMENT

OZGUR ESENTEPE
University of Toronto
ozgures@math.toronto.edu

Contents

1 My Teaching Philosophy **1**

2 An Example of Dissecting a Proof into True or False Questions **3**

3 Select Student Comments **4**
3.1 From Course Evaluations 4
3.2 From Teaching Excellence Award Nominations 4
3.3 From Student Emails 5

4 Formal Letter for Teaching Excellence Award Shortlist **6**

1. My Teaching Philosophy

My teaching philosophy is closely related to the reason why I decided to pursue an academic career in mathematics. I always have seen academic work two-fold: Produce new knowledge and to educate a new generation to produce even better knowledge. For this reason, I value teaching as well as I value research. In my six years at the University of Toronto, I worked **as a teaching assistant, a course instructor and a course coordinator.** Each of these experiences nurtured me and turned me into a great teacher. I also participated in the Mentorship Program where I worked with high school students on research level mathematics. In this statement, I will try to explain what I learned from each of these experiences. **In page 3**, I also include an example of my True or False method.

As an undergraduate student, I took several courses from several professors from several different departments. As a graduate student, I have been to several international conferences and chatted with several world experts in their areas. I have observed that there are two types of teachers: the ones you would not mind having a coffee with and the ones you would not want to have a coffee with. Hence, the first thing I aim to do at the beginning of my lectures is to create a safe environment to have a mathematical discussion in the classroom. By this, I mean three things: **students should not fear that their voice will not be heard, students should not fear that they might be wrong, students should not fear that the teacher will judge them.**

I "*create an environment so that even the most reserved students feel comfortable contributing*". This quote and the following are written by my students when they nominated me to the university-wide Teaching Excellence Award. "*His attitude towards learning with other people, respecting their proofs and mistakes, etc. is contagious also and has made it much easier for me to work with people even when not in tutorial*". I actively encourage every underrepresented group to participate in the discussion and create inclusivity. This becomes a natural task when one acknowledges and reflects on any potential unconscious biases. It is a fact that our society has underrepresented groups and we are nowhere near our potential as we do not always

hear the best possible ideas. As an academic, **I strive to educate myself, be honest, acknowledge my privileges and most importantly, listen to the voices who raise these issues.** In my classes, I actively promote events celebrating the achievements of underrepresented groups as I believe that representation is important.

I care about **mental health and accessibility** issues. In that, I make sure I can provide necessary accommodations to the students who need them. When I coordinated a course of five hundred students with twelve tutorial sections, I asked my teaching assistants to bring up any such issues to me. As a result, we were able to provide an alternative quiz time for one student who preferred typing up their quiz solutions on a computer. This student visited me in my office every week and they wrote the quiz on a computer.

During my undergraduate years in Turkey, I attended a lot of summer schools in Nesin Math Village. I learned a lot from Ali Nesin, the founder of the village and the winner of 2018 Leelevati Prize. For one, I learned **not to try to solve a problem.** Indeed, this is almost every student tries to do when they are asked a question. Instead, I learned from Nesin that one should attempt to understand the problem. At least in undergraduate level, once the question is fully understood, the answer jumps out of the book. The solution is very natural after understanding what the problem is. So, in every problem set I create I try to divide questions into several parts where they start with making sure they know all the definitions and seeing examples/counterexamples before attempting to solve the question. Warming up students like this works well as it allows them to better understand what the question is asking.

As a teaching assistant or a course instructor, I learned how to encourage students in the classroom or during office hours. **My biggest learning experience came from courses that I coordinated.** In one case, I coordinated three instructors and ten teaching assistants in a course of five hundred students. I learned that in order to achieve my learning goals, I need to make these goals accessible to my fellow instructors and my assistants. It was a pleasure to lead such a group of teachers. I visited my assistants in classroom activities and not only did I give them feedback on their performance, I also saw where I can improve myself as a coordinator and also a teacher. I thought a lot about the best way to prepare a reasonable syllabus, an evaluation system which works best for different types of courses and how to encourage my assistants to work well together. I understand the value of teamwork in **teaching large classes.**

At the beginning of each semester, I encourage my students to keep a diary of their thoughts, feelings and ideas about the course and the course material. This is one of the most efficient ways to observe the progress one is making. If one can go back in time and see how challenging a concept once was, then one can appreciate how much they learned over the time. In fact, most questions one has at the beginning of the semester seems trivial once one understands the question and thus the solution. **"There are no trivial questions. Every question is nontrivial until you understand the material and every question becomes trivial once you understand."**.

The Outreach Office at the Department of Mathematics offers a Mentorship Program every year. Within this program, graduate students, postdoctoral fellows and faculty members volunteer to have a semester long project with a high school student. I participated in this program for two years. In my first year, my mentee prepared a project on algebraic graph theory. With weekly meetings, she was able to follow a chapter of a graduate level mathematics book on the subject and prepare a poster presentation. In my second year, my mentee was able find his own research problem in representation theory after a month of weekly meetings. This program allowed me to improve myself as a mentor. **I am able to mentor an undergraduate student or even a master student in a research project.**

My methods and philosophy which I summarized above were also recognized by my department and my university. In 2017, I won a **Delury TA award** in the Department of Mathematics. In the same year, I was also shortlisted for a **university-wide teaching excellence award.** I was one of the 12 short-listed candidates among 201 nominations in a university with a student body of 80,000.

Every level of teaching is important and has its own nuances. I have great experience in teaching in many levels and I am determined to improve myself in every way I can.

2. An Example of Dissecting a Proof into True or False Questions

One method I use to engage students in discussion is to ask True or False questions. **Instead of writing a theorem on the board, I dissect its proof into several true or false questions.** I allow students to think about the question and take a vote. For example, if we are learning differentiation rules and trying to prove the product rule, I ask them

1. **T or F.** For any two functions f and g, $\lim_{x\to a} f(x)g(x) = \lim_{x\to a} f(x) \lim_{x\to a} g(x)$.
2. **T or F.** We have $\lim_{x\to a} f(x)g(x) = \lim_{x\to a} f(x) \lim_{x\to a} g(x)$ IF $\lim_{x\to a} f(x)$ and $\lim_{x\to a} g(x)$ exist.
3. **T or F.** The function $f(x) = x^2$ is differentiable at $x = 1$ and $f'(1) = 2$.
4. **T or F.** The function $g(x) = x^3$ is differentiable at $x = 1$ and $g'(1) = 3$.
5. **T or F.** The function $h(x) = f(x)g(x) = x^5$ is differentiable at $x = 1$ and $h'(1) = f'(1)g'(1) = 6$.
6. **T or F.** If $h(x) = f(x)g(x)$ and $f'(a)$ and $g'(a)$ exist, then $h'(a) = f'(a)g'(a)$.
7. **T or F.** $h'(a)$ exists if the limit

$$\lim_{x\to a} \frac{f(x)g(x) - f(a)g(a)}{x - a}$$

   exists.
8. **T or F.** For any real number z, we have $z + 0 = z$.
9. **T or F.** For any real number r, we have $r - r = 0$.
10. **T or F.** For any two real numbers z and r, we have $z + r - r = z$.
11. **T or F.** $f(x)g(x) - f(a)g(a) = f(x)g(x) - f(a)g(x) + f(a)g(x) - f(a)g(a)$.
12. **T or F. WITH THESE HINTS I CAN FIND THE PRODUCT RULE ON MY OWN!**

At this point, I stop and give the students some time to go back to the definition and find the product rule on their own if it is a proof based course. If not, I go ahead and show them the product rule by completing the proof myself.

In these 12 questions,

1. I remind students the product rule for limits.
2. I show students that the product rule for differentiation is not *that* nice.
3. I give students basic ingredients that goes into the proof.

In practice, there are three options to vote: True, False, I don't know. If there are enough people who voted the third option, I stop the question and go back to explain the problem. I use **an online platform to collect the votes.** Introducing this technology in classroom increases the number of votes I receive in each class and the effectiveness of this method. This encourages the students to participate without fearing they may be wrong or they may be judged. You can see how students react to this method from their evaluations and comments. You can find examples of such comments in the next page.

For more materials relating to my teaching, please visit `www.math.toronto.edu/ozgures/hireozgur.html`.

3. Select Student Comments

For a full list of Course Evaluations and uncut versions of student comments, please visit

`www.math.toronto.edu/ozgures/hireozgur.html` .

3.1. From Course Evaluations

1. Ozgur is the most amazing professor I have had and **I can't believe he is only a PhD student**. It's so rare — give him all of the opportunities in the world because he deserves it.
2. The instruction quality in this course was good – all content was clearly presented and explained, and all important connections between content were emphasized. Questions were answered in a clear, helpful manner, and the instructor did his best to **keep the class engaged** throughout each lecture.
3. The prof was good, he **engaged the class** and always answered questions. He made the material more interesting.
4. The instructor've taught us linear algebra vividly, and he's such a great gay who can answer our questions **patiently**.
5. Ozgur Esentepe is a great man and instructor. He can deliver the material in an interesting manner and make **relevant nice jokes!**
6. I enjoyed this course a lot, the instructor was funny during class and **created a good atmosphere for us** to learn math which makes the boring subject funny to learn.
7. Ozgur made calculus **so much more engaging** to learn rather than just speaking at us. He definitely has been one of my favorite professors here!!

3.2. From Teaching Excellence Award Nominations

1. Ozgur is always encouraging. He **creates an environment** in the tutorial so that even the most reserved students **feel comfortable contributing**, because he stresses that every contribution is worthwhile.
2. He makes the math **feel not-stupid**.
3. He makes the classroom **feel like a place for the students** by constantly polling us and asking for input and also by saying things like that he's there for us to learn. And he's just really entertaining which makes it fun to come to class and do math.
4. His attitude towards **learning with other people, respecting their proofs and mistakes, etc. is contagious** also and has made it much easier for me to work with people even when not in tutorial.
5. Students who had never spoken in class before were offering potential solutions, and **everyone felt like their contributions were meaningful.** Solving this problem helped all of us understood more clearly what it means to work through a hard problem together.
6. That's **classic Ozgur** I think, doing the obvious stuff slowly, so we can see it and really understand it, and then showing us how it can be useful and less obvious.
7. He gives us **true/false questions** about linear maps and for each one he picks someone who said "false" and asks for a counterexample, and/or someone who said "true" and asks for a proof, crediting the purveyors on the board, **and not making a big deal if they're wrong - being glad they participated anyway.**

8. He **encouraged everyone's input** (in the form of T/F polls) and applauded people who participated, even if they made mistakes.

3.3. From Student Emails

1. Are you teaching the Thursday tutorials, or the Friday ones? I want to make sure I enrol in your section, since I was with you last semester (**and you're cool**).
2. Thank you for your reply. **The blog post had some great tips**, exactly what I was looking for. I'm looking forward to trying them over the summer.
3. When I was struggling at certain times this year, your tutorials made all the material seem so clear. And when I still had questions, you answered them; even the really stupid ones. So thanks.
4. I could **never have imagined learning so much** in one year, and I owe much of it to you.
5. Hi Ozgur,

   I'm one of the students in your 240 tutorial, and I wanted to say I'm happy about today's tutorial. I think it would have been really easy for you to have just gone over homework or test problems, and it would have just been another tutorial. There's nothing wrong with that, but I do appreciate it when you go outside of what's required and show us stuff that's interesting, even if it's confusing for us.

   I really **appreciate that you try hard to do your best**, and you really seem to care about the class, many TAs are not like this. Thank you.

   Sincerely,

   A student
6. Dear Ozgur

   I am the old guy from the back of the room. I wanted to thank you for the tutorial today.

   I am a biologist by training. I am studying (officially math/physics) to enrich my life but also because I think a long time ago my life took a wrong turn. I am too old to become a born-again mathematician but I am enjoying it nonetheless.

   Last year I took 157 and felt like I was gasping for air at every tutorial, I never said anything and it generally took 2-3 days to digest the material. Today was the first math tutorial I attended since starting this last year, that I felt as though you started where I was comfortable, gradually brought us along and I felt a little more competent by the end than I did in the beginning.

   I actually woke up this morning considering dropping this course. With 4 kids at home (in school), making school lunches and working 9-5 is tough let alone taking a course. I felt like I didn't even have time for the problem sets.

   However I really feel much more comfortable after the tutorial, I came back to my office and banged off the remaining two questions from the problem set. Maybe it's all garbage I don't know but **I at least feel better about the material** and I felt compelled to let you know.

   Many thanks please don't speed up :)
7. I didn't know if I wanted to study math when I came to u of t. Your tutorials really made a difference. You did a really good job. **Except now I gotta do math. So kinda all of this is kinda your fault.**

4. Formal Letter for Teaching Excellence Award Shortlist

UNIVERSITY OF TORONTO

CENTRE FOR TEACHING SUPPORT & INNOVATION

May 3, 2017

Dear Ozgur Esentepe,

This letter is to congratulate you on being nominated for a 2017 Teaching Assistants' Training Program (TATP) TA Teaching Excellence Award. Out of 201 TAs nominated from across the university, you were one of only 12 short-listed candidates for this award. This means your nomination was supported by letters from at least one faculty member who observed your work in the classroom, and by multiple students who expressed a sincere appreciation for your teaching strengths and a desire to see these strengths honoured. The TATP TA Teaching Excellence Award recognizes the outstanding achievements of teaching assistants across all four divisions in the School of Graduate Studies at the University of Toronto, and in being short-listed for this award you can count yourself among the University's top TAs!

On behalf of the selection committee for the TATP Teaching Excellence Award, allow me also to extend our thanks for submitting a nomination package for the second stage of nominations—we recognize the time and effort needed to assemble teaching materials, additional letters of support, and to prepare a teaching philosophy statement. We very much enjoyed learning of your teaching beliefs and your experiences as a University of Toronto TA. Should you wish any of the materials you submitted for this award returned to you, minus any confidential materials, please contact me directly. Your nomination package is available for pick-up in my office.

The selection committee faced a very tough decision this year, as we received exceptional nominations for a number of highly qualified award candidates. This was also a particularly competitive year. We received a high number of nominations—498 nominations from students and faculty were received on behalf of the 201 nominated TAs. We hope, therefore, that even though you were not successful in winning one of the 2016 TATP Teaching Excellence Awards, you can view being one of only 12 short-listed candidates as a significant accomplishment. The selection committee certainly shares this view.

Once again, please accept our sincere congratulations on being short-listed for this university-wide award. Very best wishes for continued success with your studies and your future teaching endeavours.

Sincerely,

Marie Vander Kloet
Assistant Director,
Centre for Teaching Support & Innovation (CTSI)/
Teaching Assistants' Training Program (TATP)

for members of the TATP Teaching Excellence Award committee:
Robin Sutherland-Harris, TATP Coordinator (Humanities) and TATP TA Teaching Excellence Award Administrator
Mark Hathaway, TATP Trainer (Social Sciences)
Darius Rackus, TATP Trainer (Sciences)
Alli Diskin, TATP Program Assistant
Dr. Marie Vander Kloet, Assistant Director, CTSI/TATP
Professor Carol Rolheiser, Director, CTSI

130 St. George Street, 4th floor, Toronto, ON M5S 3H1 Canada
Tel: +1 416 946-3139 • Fax: +1 416 946-8588 • ctsi.teaching@utoronto.ca • www.teaching.utoronto.ca