

The concept of analogy is a powerful tool in educator's hands. It's an excellent way to communicate a complex idea without unnecessary details. Also, it allows you to show someone your understanding of a particular concept quickly and concisely. For example, I perceive the world of mathematics as I do the world of music. Music has two main components: the boring/complicated notes and the beautiful/soft melody they produce. Many are familiar with the electric feeling that washes over you and envelops you when a beautiful piece is played. That exact electricity I feel every time I teach, study, or think about mathematics.

Mathematics is not about memorizing theorems and formulas. Those are just the notes and the way to express the true spirit of math. The biggest challenge for a math educator is building a bridge between the learning routine and a true understanding of the concept. One of the primary roles of an educator is to show the path and teach how to overcome challenges along the way. Through my teaching experience starting in 2013, I developed a personal approach where my goal is to make a student fall in love with math, understand the importance of it in our everyday life, and calculate a 20% tip from the restaurant bill.

I was lucky to get all the possible ways of teaching:

- Tutoring in Community College and until now,
- Being a teaching assistant as an undergraduate and a graduate student,
- Being a lecturer for a math course twice,
- Teaching math via YouTube in my spare time. You can see my teaching style via [www.youtube.com/MathForLife](https://www.youtube.com/MathForLife) (11 000+ subscribers).

My path went from having no idea what to do in class to having a structured and organized workflow. I tell my students, "A person will not learn how to dance just by watching others dance." That's why I threw away the idea that I would solve as many problems as possible during my teaching. Instead, I present and refresh the materials related to the current topic. Then, I give students a couple of problems to work on them individually. I aim to make them face the problems and see what they understand or don't understand. Next, I ask them to compare their findings with their neighbors. I walk around, check the work, and answer the questions. Finally, I will present my solution and move to the next concept. This approach allows students to have their own time on the problem, have group work, and see the standard solution for the problem.

During COVID, I faced a lot of challenges with online teaching. The goal of an educator is to adapt and find a way to make the educational space entertaining and exciting. That was the time when I implemented the idea of short conceptual quizzes. I still let students work on a problem individually, but it was almost impossible to do group work. So, I made a couple of pop quizzes to interact with my audience. I made short questions about certain concepts or next solution steps and was asking the entire class as an online live anonymous survey. That way, I saw the number of correct/wrong answers and how many people engage.

I taught my own course during the summer period for Multivariable Calculus. I did it twice: in person and online. First, I understood the crucial difference in workload and preparation compared to a teaching assistant. Also, it taught me how to use my in and out-of-class time wisely. I asked myself, "What's the main goal of the lectures?" Students can read books or utilize other resources, but the main idea of the lectures is to tell a coherent story and tell the stuff that is not written in the book. I like to think about this as "reading a math article vs. talking to its author in person." If I choose between these two options, I always will choose the second one. The goal of a lecturer is to make a class engaging, and one of the ways, as I mentioned before, is to ask short pop quizzes

to give students a brief pause to process the material and prepare them for the next portion of knowledge.

Finally, the most critical point is that Mathematics requires a lot of patience and hard work every day. It's the same as learning a foreign language with an alphabet as math symbols and sentences as theorems. That's the biggest challenge that students face: giving up too early. That needs to be clearly communicated to students. It's okay not to understand something upon the first reading. We all have different styles and speeds of learning. We cannot learn something just by watching others do that. We need to sit down and go through that everyday routine. Like in music, to master some Beethoven pieces, I first need to learn the location of the notes on the piano. Those are some ideas that I am communicating to my students as an educator. Overall, I am excited and love teaching. It allows me to communicate beautiful art pieces; yes, math is an art. I enjoy watching students grow and believe that they can do math regardless of their background. It develops critical thinking and a unique way of seeing the world. I want to finish it with my favorite quote:

"From a certain point on, there is no more turning back. That is the point that must be reached."  
Franz Kafka