

This essay is a reflection on my own learning process. I have also questioned some of my classmates from the graduate program, and my old classmates from Costa Rica on this issue.

I began by questioning my own learning process which I can summarize into 5 main points:

1. Receive an explanation about the topic with very concrete and basic examples.
2. Convert the concrete examples into abstract ones with instructions from the professor.
3. Practice with other basic examples while being guided.
4. Start questioning myself in search of a general pattern while solving examples on my own.
5. Comprehend the pattern and be able to produce my own examples and questions.

This process didn't include evaluation but when there's a professor, that issue must be considered. After asking others, I noticed most of the experiences were similar. Sincerely my dataset is pretty biased however, I feel that anyone else that I could ask would describe a similar experience.

I concluded that this way of learning mathematics is the "*tried and true*" way of doing it. Being in grad school or having a job is already a measure of success, and since all the people I asked belonged to one of those two groups, it follows that **this method of learning produces good results**. I also know that I didn't measure the quality of the contents of what they learned. Even though I consider that part of the "best learning process" is the quality of the information received and retained, I had to assume that for everyone I asked, the quality was implicitly decent at least.

Even though my belief is that the "*tried and true*" way is effective, I must admit that I have my doubts. I can't confirm for certain that this is the best; through my studies I have had some tribulations which, in some cases, made the experience not as good in some sense. We will explore these experiences later in this essay. For now, let us talk about my own practices.

Regarding **the "*tried and true*" method**, I believe from my experience up to now, it **is the best method to learn mathematics** although there may be others I do not know about. I tend to use more examples while giving lectures instead of reciting the result and staying mainly on the theoretical side of things. This is combined with working sessions in which the students work in groups. While walking around to check on my students' progress, as soon as I see a mistake I point it out to them.

At the end, I review the exercises on the board while providing examples of *slippery slopes* which I might've noticed some of my students fell into. During these explanations I tend to pause and ask for questions. If no one asks directly, I try to look for students who are watching the board closely and ask them to share their thoughts. And at the end I hand them additional resources so they might study on their own.

Along these lines, I believe that **everyone is capable of learning mathematics despite their academic background**. I strive to take into consideration where the student is in his or her learning process and level out the playing field for those who are coming behind and not to go too far out with the ones who are already capable of understanding perfectly. It is important to transmit them the security so that they might ask questions such as "*can you repeat?*", "*how did you go from here to there?*", "*which was the formula?*", or even , "*how will I apply this in the future?*" without making any student feel bad about it.

No question is out of place and I strive to create an environment where students will feel safe about asking questions.

Even if studying individually is important, I firmly believe that **mathematics is a collaborative effort**. In that sense, greater progress is achieved when people work together. My students work together and I encourage them to compare their processes to see how they did it and in some cases explain to one another.

The resources which I give them: the webpages with exercises and solutions, video-lectures from other professors, or other books which explain the subjects that I'm teaching in another way are tacit ways of collaborating.

There's also an important point to mention regarding help, and that is the "*impostor syndrome*". Students who seek help shouldn't feel ashamed to request it, looking up an exercise on the web, understanding it and writing it in their own words does not take their merit away. Those are still their answers even if they looked up an exercise. I remind them of this fact because I have felt it numerous times as well.

All of the aspects of my learning processes have been thoroughly influenced by my own professors. My ideal of what good mathematics teaching looks like comes from them, and also it is formed by the complement of what was done by what I consider my bad professors. Implicitly, collective opinions are precisely what orients me to call a professor good or bad and therefore measure the success of my claims.

Most of my good professors had several personal qualities and teaching practices which made them stand out. Personally I believe their attitude towards the subject itself, and towards the students as well is one of the most important characteristics. Good professors are enthusiastic about what they are teaching. They are also modest and accessible, not egocentric and arrogant.

These qualities can be expressed through nice handwriting, with even-tempered voice when responding and while lecturing, and timing exposition to go right with the schedule.

There is one professor who marked me because he helped me realize I had to continue my maturing process in math. The only class which I failed was the one that he taught me, and the value which I learned from this professor was honesty. Many times, professors will spoil students to some degree, but this one didn't. When asking him about my own progress, he was honest with me and told me the truth that I wasn't meeting the expectations without beating around the bush. This is something which I mean to do with my students.

I want my students to know that I am a honest person who will not hand them an A in the course for free. That I will evaluate them justly without bias.

Mathematics is the discipline which I love and want to dedicate my life to, I get a feeling of amazement many times when I see new topics and discover new patterns within the ones I already knew. This curiosity and enjoyment is part of what I try to show when I am teaching. My hope is that my students will feel the same or at least similar to me during the course.

Sadly I've been in classes with professors which I regret having, so I understand when my students form their opinions about mathematicians. Those might be negative opinions, but my hope is that I can clear that image a little bit. Not all of the mathematicians are grumpy and egotistical. In the end, I want them to feel satisfied about having taken the course with me.

As a final remark, I'd like to add that their experiences outside the class are as important as the lectures which I give them. I wish that my students feel motivated about working on problems which piques their curiosity, that they will work on them and then talk about them with their classmates or myself. In the end I strive to give my students the experiences which I missed and improve on what was enjoyable and profitable.