

Teaching statement, Urban Larsson December 2017

Mass education does not promote a good teaching/learning environment. Still we do it, because of the number of students that need to be graded. It is a crude reality that many approved students do not learn the subject, even though they pass the courses; the main reason for this is probably various copycat procedures among students, which do not invoke the necessary thinking on the subject.

I taught many university courses in mathematics, and was responsible lecturer for three. Before this I also taught many highschool courses in computing and mathematics. The best students do not really need the lectures, but they probably have good use for them. The levels below the best students, find it hard to cope the speed of lecturing, so they often resort to copycat procedures in the hope of getting to learn later. However, in the curriculum there is rarely room for 'a later', so most subjects get only a very superficial overview, and not much real learning is happening.

What is the remedy for this situation? In the future, I am positive that humanity will adapt less traditional methods, and meanwhile we must continue the imposed plan and make small steps forward, to lead a few students that shows more interest. Overall university environments are good places to be, and there is much opportunity to learn, even if the actual curriculum is far from optimal.

Another aspect of teaching is that I learn a lot while teaching; my understanding of the subject evolves, in particular in relation with students' learning. Perhaps some of the enthusiasm, which I usually show while teaching, is guiding some of the students. Unfortunately, I have seen several students below the top level leave the course because a too high abstraction level (this was a course in Vector Spaces) and there was not enough room in the course plan to help those students understand new ways of thinking. The crude reality seemed to be: 'either you get it, or you do not get it'. Is there a way to guide the students in more abstract thinking, or should we rather just continue to filter out the students who can think abstractly from those who cannot?

Some students may be more inclined towards problem solving, or even in making up new interesting problems. How can those students be rescued to a larger extent? Mathematics is larger than just learning a variety of math subjects, and we may loose students who have more inclination to making up problems and solving problems, than assimilating prearranged courses. I would like to be part of a different math education, with a curriculum, which allows for more individual creativity on all levels of university mathematics.