

Dror Bar-Natan - Teaching Philosophy

<http://www.math.toronto.edu/~drorbn/Misc/TeachingPhilosophy05.pdf>

I'm a horrible student and a horrible listener. It's very difficult for me to pay attention in talks and classes; for the least reasons my mind wanders and I'm totally lost. And when I'm lost, I'm lost for good, for usually I haven't the will power to concentrate again and pick up from the last I followed. If the lecturer is unconfident, or if he doesn't believe in what he does, I sense that right away and stop believing him too. If she doesn't tell me what's the purpose or if it isn't absolutely clear to me that the purpose is worthwhile, I assume there isn't a good purpose and fall asleep. If the route to the goal seems too tedious, I'm quick to lose my patience. I sense it right away if the speaker doesn't fully understand what he or she is talking about, and if that happens, I'm elsewhere. If his language isn't clear, I don't listen. If her writing isn't readable, I don't bother reading. (Exceptions made for the rare events when the content really is brilliant). I always find myself missing a key phrase or a key argument; if it isn't on the blackboard or on a handout, I'm out. It all gets a lot worse if I don't have sympathy to the speaker as a person; if I don't get the signal that (s)he really wants me to listen (ME; not just somebody else in the room). And I'm shallow; jokes, anecdotes and (well performed) technological sleights of hand grab my attention and make me sympathetic. Finally, I tend to forget everything I heard very quickly unless there is a clear and meaningful moral to it and the logical structure leading to it is simple, motivated, clear and free of unnecessary complications.

When I lecture or teach I try to satisfy Dror Bar-Natan, assuming he is in the audience. Often I fail, and when I succeed, I often find that the psychological makeup of my audience is different than my own. Sometimes it does work.

Sometime in my second year in university I suddenly discovered that most of the things I studied really mean something; that proofs are not just long chains of logical deductions discovered by evil math geniuses, that behind every worthwhile argument there's a beautiful picture that fits together with everything else. Except that my profs tended not to talk about these pictures, and certainly not about everything else. They didn't even tell me that these pictures were there. Maybe these pictures really do live isolated within each mind separately and the only way to reach them is to discover them, each one of us afresh. My second year revelation was that with much concentration and introspection and after giving it some time, a beautiful picture always emerges. I wish somebody had told me that earlier (or if somebody did and I didn't notice, I wish somebody had repeated it again and again and again).

I always try to tell my students about the big picture and where to find it (but only few of them take notice).

For every course that I taught in the last 6 years I have constructed a web site containing a wealth of class material: lecture notes, handouts, exams, examples, etc. Some of these web sites extend over several hundred individual pages. A printout of the "front page" of each of these sites is attached; all sites remain available (and will remain available indefinitely) from my main "classes" web page at <http://www.math.toronto.edu/~drorbn/classes/>.