Reflections on Teaching: What I've Learned and What Might Help

Over my years at IIT Bombay, I've taught both UG and PG courses, though predominantly UG core courses. When I first joined as faculty, I used my own connection with IITB as a former undergraduate to my advantage. I could relate to students because I'd sat in those same classrooms not too long ago. I recognized that students have many of the same foibles my batchmates and I had, which allowed me to bring humor into the classroom through gentle sarcasm. That familiarity helped build rapport early on, and in hindsight, that early rapport made everything else smoother.

The best teaching I've done has always been when the topic genuinely interested me and I myself wanted to learn more about it. For a new course, I'd prepare deeply by solving many problems, and pondering over subtleties. In general, for a good lecture, I like to have about 1.5 times the material I actually need. Of course, sometimes I'd fumble in class and make a fool of myself, but students were generally understanding. Over-preparation provides a safety net that under-preparation rarely does.

While I prefer blackboard teaching, I've shifted to a hybrid mode where figures or key ideas are presented on slides, while the elaboration happens on the board. This works especially well for courses that are example-dominated. The real challenge comes when the topic is vastly different from your research and you haven't studied it for many years. Then it really takes effort to get back into it.

For me, lecture delivery is greatly dependent on class response, which is both a strength and a drawback. If I worry too much about not making a fool of myself, I paradoxically end up making more mistakes. But in semesters where I build good camaraderie with the class, the output can be magical. It's all about the flow and spontaneity. Completely planned lectures, which I was forced to do during the COVID semester, did not work so well for me. Nowadays students really want everything handed to them, and I'm very disorganized, which is a general challenge for teachers like me.

I did not force attendance in the past, although I would “threaten” students with the fear of DX grades. My experience has been that the best performers will do well irrespective, and there are some who just don't care and will perform poorly nonetheless. It's really about the middle layer whose grades would certainly improve if they attend classes regularly.

I usually don't give homeworks, mainly because with UG students the big problem is always about sincerity and copying. But I am a big fan of tutorials. I have nice memories of connecting with students during tutorials—solving problems impromptu, dealing with various subtle questions. That's generally the fun part. However, over the past some time, I find that students feel everything can be obtained via LLMs. It's clearly true that LLMs are here to stay and have already changed our mode of teaching. But the value of experience, judgment, and reinforcement of ideas and concepts still lies with teachers, although I'm not sure about the exact mode. It's terrifying and exciting at the same time.

For evaluation, I generally stick with the standard format: quizzes, midsem, and final exam. I spend a lot of time designing exams that are relatively easier to grade. Specifically, questions with clear interpretation and lower ambiguity in responses are the best, although that's not always possible. My best exams have a gradation of problems with varying levels of difficulty so that there is good spread in the scores. Grading, honestly, is the most painful part for me. Since most courses I’ve taught have problems requiring partial marking, it’s a necessary evil where we do the best we can. Sometimes I have TA support, but I’ve done a good deal of grading myself for many courses.

Course evaluation is something I take very seriously. I go over the feedback and try to amend my teaching based on any fair criticism. However, over the past couple of years, barely anyone is giving feedback anymore, perhaps a symptom of the same "digital fatigue" affecting attendance.

What might help junior colleagues?

For what it's worth, a few things I'd pass along:

- **Show enthusiasm:** Don't be afraid to show excitement for topics you're genuinely interested in—students sense that immediately.
- **Over-prepare:** Preparation matters enormously, especially for new courses, and 1.5x material is a safe buffer.
- **Build rapport:** As much as possible, connect with the students early; it makes the rest of the semester much smoother.
- **Find your style:** Don't force a teaching style that doesn't suit you. Whether it's fully planned or spontaneous, authenticity works better than a forced persona.
- **Don't take feedback personally:** Take it seriously when it comes, but don't be discouraged by sparse or negative responses.
- **Pay attention to the middle tier:** Those who stand to gain the most from good teaching are always there, even if they're not always vocal about it.