

As a graduate teaching student/lecturer at Missouri University of Science and Technology, I have had the privilege of teaching and connecting with a number of students over the years. I have had the opportunity to teach a variety of courses as well as many kinds of students. Each has given me a new perspective on how I teach and learn, some of these observations I would like discuss here.

One of the most important strengths an instructor can have is the ability to communicate effectively. I believe that a successful course is an open dialogue with the students, not with the chalkboard. It is also important to recognize that not every student learns the same way. Therefore, I prepare and present my lectures so that I can accommodate a variety of learning styles. When I first began teaching, I was roughly the same age as my students. I realized that students related more to me than the author of their textbook since we were influenced by many of the same things, whether it be music, movies, geography, sports teams, etc. With that in mind, I have tried to describe mathematics in every day language.

A good instructor is one that is available to their students outside of class. No matter how clear an instructor is during lecture, there will always be students who are too afraid to ask questions in class. I believe that office hours are a vital tool to engage such students in the learning process. I also use this time to get to know my students and to address any concerns not directly related to the course. In addition to office hours, I run extra tutoring sessions in connection with certain courses. During these sessions, I work with students one-on-one and encourage group learning. I have also constructed a web-site where students can view additional examples and keys to old quizzes and exams.

Teachers must also be able to motivate their students. In an introductory course, students are usually driven by one of two goals: either they to get a good grade with the least amount of stress possible, or they seek to limit their efforts to the material they believe they will use in their future endeavors. In either case, it is easy for students to convince themselves that they do not have to engage the material, and they end up not getting much out of the course. One of my firm beliefs is that the energy of the instructor is the

energy of the course. If an instructor is indifferent to the material, the students will be as well. My goal in the classroom is to make sure students realize how I am enthusiastic about the material I am teaching. What I have found is that students' work ethic (and overall performance) mirrors the perceived interest of the instructor in the material.

At the end of the semester, the one thing I want students to be able to recognize the fundamentals. Usually an undergraduate math student is initially only concerned with how to solve a problem. I encourage my students to go beyond the basic mechanics and investigate why things work as well. I challenge my students by asking questions that go beyond the book. For instance, when teaching elementary differential equations I ask my students to classify each equation before attempting to solve it. This is not something that the book asks them to do; however, the kind of equation a student has dictates their options for solving it. Since the material in a course usually builds on previously learned concepts, I have my students look for recurring themes. When students recognize patterns and connections, they build a deeper understanding of the material and thus rely less on memorization. I teach students not only to execute each method we develop in the course, but I want them to be able to articulate the trade-offs when more than one method is applicable.

Ultimately, I have found that the instructor gets as much out of the course as the students. In preparing to lecture my students, I have become more familiar with the material than I ever was an undergraduate. I have also realized that teaching is always a work in progress. Although the material may be the same from semester to semester, I have noticed that the students bring something different each time. Each the class has their identity and perspectives apart from the previous semester. In some cases, students have also taught me another way to approach the material. In the end, I have learned to incorporate their perspectives in my lectures as well as adapting my teaching to address their various needs.

Looking forward, I would like to teach introductory courses such as calculus, linear algebra, and ordinary differential equations as well as upper level undergraduate courses such

as advanced calculus, difference equations, game theory, and mathematical modeling. I would also enjoy teaching graduate courses in real analysis, control theory, and dynamic equations on time scales.

Some excerpts from anonymous student evaluations:

- “Great teacher! I really like the note-taking style. It is very in depth, specific, and easy to understand!”
- “Very approachable, enjoys what he does. Very flexible, genuine concern for students’ understanding of the material. Awesome teacher!”
- “Nick is one of the best teachers I’ve ever had at S&T. He provides a lot great examples everybody can relate to. Great motivator as well.”
- “He is very enthusiastic about the material and knows how to teach in a way that students understand.”
- “Very upbeat and entertaining. Really able to convey the material in a way I could understand.”
- “He’s enthusiastic, accessible, and presents the material clearly. I’m sort of a “big picture” person so his emphasis on classification helped.”
- “Best math teacher I’ve ever had. Great at explaining difficult concepts.”
- “He is very energetic. He also wants students to succeed and is very helpful if someone is stuck. I went into this class with bad expectations, but with his teaching methods I had fun with the course.”