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TEACHING PHILOSOPHY

All students do not learn the same way. Learning chemistry can be difficult and it is important to approach the material in a variety of ways to find what works best for the individual. The learning objectives in my course steer students to an understanding of a broad set of

Selected Student Comments from Spring 2019 Course Evaluations

“The professor provided many tools in effort of ensuring that each student was well-equipped with the resources to understand material. The lecture style and interactive note-taking was very helpful in the process of learning the material.”

“The class was very effective in helping me learn, in fact, it is a class that I didn't need to cram before an exam. The class was designed in a way that is helpful in learning rather than memorizing”

“Every aspect of the class was effective in helping me learn, in fact, there were aspects of the class that helped me plan on what I need to do in order to do well and learn in my other classes.”

“This professor provided the best learning experience I have had with any chemistry course.”



chemistry knowledge and fundamentals of the field. Rather than memorizing dozens of principle reactions and organic compounds, my goal as an educator is to find creative ways for students to understand molecular features that lead to certain reactivity patterns, enabling the student to use this knowledge to make sound predictions when these features are encountered in unfamiliar reaction schemes. By actively understanding the students as individuals and using multiple teaching methods, I strive to convey the knowledge necessary to achieve these objectives in an effective manner to enhance long-term knowledge and skills that can be used across multiple courses and careers.

Typically, a student must master higher levels of understanding a subject to achieve long-term knowledge. An overarching perception of many students is the idea that science, organic chemistry specifically, requires



“...I learned so much because she made me feel very comfortable to ask question. Sometimes, I would not even know what to really ask but she was always open to helping me understand...”

“The instructor had pieces of paper called "Muddy Points", to write what we needed clarification on... [then] the instructor made videos or went over them in the next class.”

“The teaching of the course was excellent, it made a class that is challenging into something that can be understood as long as you followed the structure of the course. The instructor’s teaching and how the class was designed was effective in helping us learn.”

“Excellent experience in a class of a well-known difficult subject. The professor made the material more enjoyable than expected, and the class scheduling and syllabus was very organized and well-followed.”

sheer rote memorization with the regurgitation of facts, the lowest level of Bloom’s Taxonomy. My objective as a chemistry instructor is to break past this perception and encourage students to think about, question, and analyze the information provided, creating a deeper level of mastery. In order to inspire my students in this manner I must first understand them as individuals and familiarize myself with their current inspirations. As a teaching assistant in an Organic Chemistry II laboratory course at Georgia Institute of Technology, most of my students were there to check off a requirement for healthcare related fields and post-graduate work. Many students wanted to be medical doctors or dentists; very few (if any) wanted to go on to work in a research lab doing bench work. This was important for me to understand. Rather than enjoying the assigned laboratory experiments and achieving a deeper understanding of the question at hand, students would focus on “is my compound supposed to be blue because I don’t want to have to do this again...” Without any real desire for the data or outcome, students would fixate on achieving the end result and not actually understanding what is occurring in the process of getting there. To make the material more relatable, I would explain how this type of reaction or chemical process could apply biologically or in the medical field. Identifying unknown compounds is exciting to me, but understanding how this organic compound is a drug that can cure a headache and how it interacts with biological processes to achieve that affect is what excited them and resulted in deeper understanding of the material that could be measured in their lab report grades. Having these types of conversations to excite the students during my office hours resulted in students better prepared and more eager for each lab session.

While the laboratory is a great opportunity for the “hands on learners” to excel, classroom teaching is essential for developing long-term knowledge. Lectures with



PowerPoints, white boards, and document cameras are often necessary to convey the material, however, it is important to couple that with worksheets and hands-on models in order to build opportunities for students to actively engage with the content. Filling out a worksheet on the document projector while students follow along with their own blank worksheet is my primary lecture style. Discussions, readings, group work, and presentations are examples learning activities I use to reach out and teach other types of learners. For example, one of my favorite lectures in organic chemistry is on stereoisomers, a difficult topic to explain due to the three-dimensional nature one must view molecules in. I introduce the material using a PowerPoint followed by a worksheet and small group work to solve problems as we go. I also have students use model kits as a way to physically touch this concept. Using these models, students determine if compounds are enantiomers? Diastereomers? The same

compound? I have been both a student and a teacher of stereoisomerism and I remember the confusion that can occur. By breaking it down to the core components and repeating the concepts using many different teaching methods, students grasp the material more effectively and often retain the information, demonstrating these concepts correctly at the end of the semester on a final or an official American Chemical Society Organic Chemistry Exam. These methods are intended to enhance long-term knowledge and hopefully allowing the student to apply these concepts to MCAT exams, post-graduate courses, etc.

I continue to grow as an educator with each group of new students I have the pleasure of working with. Understanding them individually has given me the opportunity to better understand what teaching methods I can use effectively and what techniques seem to work best overall in a chemistry classroom. As I proceed to gain experience teaching, I hope to continue to actively understand my students and inspire them to learn to satisfy their own desire to learn. With this goal in mind, I hope to enhance the long-term knowledge of organic chemistry in the minds of many future teachers, scientists, lawyers, healthcare professionals and whatever else my students desire to be.

