Teaching Philosophy Statement

Helping students form new *connections* within the context of biology is my primary purpose as a teacher. Forming these connections ensures that my students have the necessary skills and information to not only attain a degree, but to be successful wherever they go after graduation. To achieve this goal, I work to facilitate four primary connections for my students: connecting my students with me as the instructor, connecting my students with the material, connecting my students with each other, and connecting my students to the world around them[1].

All of the most influential teachers I've had in my own education were able to connect with me personally, making me feel valued not only as a student, but also as an individual. As a result, ***connecting with my students*** is something that I strongly emphasize both inside and outside of the classroom. At the beginning of every semester I make it a priority to get to know each of my students, by learning their names and finding out their interests and goals. My desire is that every student feel relaxed and comfortable in my classroom. One of the biggest hindrances to learning that I have observed with my students is their own apprehension to ask for help when there is something they don't understand. When my students recognize that I am invested in their success, they become more comfortable participating in class, asking questions, or coming to my office hours, resulting in better comprehension of the material. I am looking forward to teaching in an environment where I will be able to reinforce this student-faculty relationship outside of the classroom by mentoring students and supporting various student activities on campus.

Within the context of the classroom, an important task I have is to help ***connect my students to the content***. This starts by making sure that I am conveying to my students how interesting and exciting I find biology. When I can get my students to feed off of my enthusiasm, I've found that it helps them engage and leads to a stronger mastery of the learning objectives. Another way I help students connect to the course material is by incorporating active learning into my courses. I have designed and successfully implemented various methods of active learning: worksheets, group discussion, guided problem solving, small group presentations, and student-assisted demonstrations. As an example, cellular respiration is often an area where students have difficulty synthesizing all of the information into a coherent story. To help students see the big picture, I dedicate one class for students to map out all of cellular respiration on the board, and then they take turns explaining the routes of various molecules through the system. Students enjoy this activity and find the unique perspective to be beneficial. While the specific approach must be customized to match the particular learning objectives and course, active learning is something I will continue to incorporate in any class that I teach.

Collaboration in the sciences is a powerful tool that helps forge new ideas as people with different expertise come together to achieve a common goal. That is why I find ***connecting students with each other*** through group work, projects, or labs to be a critical component of any biology course. "Team Assessment" is an example of student collaboration that I have used to help students in my discussion sections reflect on specific learning objectives as a group. For this particular type of assessment, students answer questions as individuals, and then come together as small groups to provide a single answer to each of the same questions. Their grade is based on a weighted combination of their individual and group responses, and my students have responded very positively to this assessment type. I also implement collaborative learning in my

[1] Expanded from Kreizinger, J. 2006. Critical connections for the first day of class. *The Teaching Professor*, 20 (5), 1.

anatomy and physiology lab sections. Instead of simply providing my students with a set of structures/functions to identify and memorize, I apply inquiry-based learning techniques to promote group discussion and critical thinking. For example, when learning the openings in the skull, I ask my students questions that require them to handle the skull and think about the functional significance of various anatomical structures, like "Why do we need openings into the cranium, and what structures need access into this compartment?" Taking this more inquiry-based approach helps students develop the necessary skills to solve new problems, which is a fundamental goal of science education.

My final goal as an educator is to ***connect my students to the world*** in order to provide them with the necessary skills and experiences to prepare them for life after graduation. One necessary skill that students need to develop before they receive their degrees is communicating scientific ideas to others. These skills are developed through the use of oral presentations, posters, lab reports, and/or research papers, and are things that I will include in my courses. It is important that my students understand their responsibility in promoting scientific literacy in the world, so I would like my students to share some of these works outside of the classroom. Depending on the precise nature of the work, this could take the form of a poster session open to the campus and community or participation in a specialized conference.

Providing students hands-on opportunities to explore various career paths and applications of biology outside of the classroom is another important connection to the world. Undergraduate research is an outstanding way to achieve this and lets students actively learn and engage with the scientific process. I was fortunate to have had these types of experiences as an undergraduate, which played an integral part in establishing my own career. However, not every student is interested in conducting research in a lab, so I am also looking forward to help innovate new opportunities to connect those students with biology-related internships and volunteer work in the campus, community, and beyond.

Establishing strong connections between student, teacher, content, and world, enriches the educational experience of biology students and is part of what distinguishes a liberal arts education. It is my hope that the connections I help my students form will not only give them the skills and experience to be successful in their individual careers, but that these connections will be long-lasting and will help shape how they engage with society.