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Teaching Philosophy Statement

My journey as a teacher started when I served as a teaching assistant in a high school while pursuing my Bachelor of Science degree in Biological Sciences in Brazil. The experience of closely following the personal and intellectual growth of my students inspired me to further my education and earn an undergraduate teaching degree in Biology Education. Upon graduation, I volunteered as a science teacher in an adult education program, while I pursued my Master of Science degree in Genetics and Evolutionary Biology. For approximately two years, I taught biology to adults who never had the opportunity to receive formal education in their youth. This experience allowed me to witness firsthand how education can impact and effectively change lives. During that time, I learned how to adjust my teaching strategies through creating active learning activities that accommodate a diverse range of learners. These skills, developed in basic education settings, are transferable to any educational environment.

During my PhD degree in Entomology at Cornell University, I recognized the importance of implementing active-learning techniques in higher education. As a teaching assistant for the Insect Biology course, I oversaw the laboratory sections and focused on teaching students how to use dichotomous keys to identify insects to family level. My initial teaching approaches led to low student engagement and some students did not even attempt to use the dichotomous keys. To overcome these issues, I redesigned the lab format by adopting active-learning strategies. In this new format, I briefly introduced the immense diversity of beetles and posed the central question: “How can you distinguish different beetle families?” To explore this topic, I provided images of multiple beetles, asked students to infer which ones belonged to the same family, and discussed the various complications of this task. I then organized students into small groups and invited them to identify four beetles to family level. I followed this activity with an entire-class discussion on their actions during the exercise, their results, and conclusions. Finally, I asked students to identify a different beetle individually and apply the new skills they developed in their groups. This approach greatly improved student engagement as they actively participated in the discussions, interacted with their peers, and helped each other while using the dichotomous keys.

Scientific literacy is another priority for me because I view it as critical for informed decision-making and responsible policymaking in society. I helped promote this as a teaching assistant in three different courses at Cornell. In “Alien Empire” and “Honey Bee Biology”, courses offered for non-entomology majors, students learned how to read, interpret, and critically evaluate scientific articles. Students reflected on whether the data supported the broader claims and conclusions presented in the paper, as well as identifying any potential conflicts of interest on the part of the paper’s authors. In “Model-Based Phylogenetics”, a major specific course offered for upper-level undergraduate and graduate students, students learned how to ethically design research projects, then collected and analyzed their own data, and reported it in the style of a scientific publication. In each course, my goal was to not only teach students how to read and interpret primary scientific literature but also foster critical thinking skills. This enables them to discern reliable information and apply it effectively in their lives.

My commitment to fostering an effective learning experience drives me to continuously develop my teaching skills. My goal as an educator is to create a safe and inclusive classroom environment where students can actively engage with scientific concepts, discuss ideas collaboratively, and expand their scientific literacy and critical thinking. This skillset brings students to a lifetime of discovery and can be applied to any career they decide to pursue.