Daniel P. Weller – Teaching Philosophy

Physics is everywhere around us, and it is a beautiful sight to behold. A student recently joked to me, "I hate this class because now I see physics everywhere I look." Although the initial comment was rather humorous, I found a great sense of pride in helping my students recognize the pervasiveness of physics in their everyday lives. As an aspiring college-level educator, my teaching philosophy is deeply rooted in the belief that physics is not just a subject confined to textbooks and classrooms; rather, it is a universal force that shapes the world around us.

I am committed to delivering the highest-quality education for my students. My passion for education is unwavering. I aim to guide future professionals toward success by nurturing their ability to think independently, analyze data critically, and incorporate diverse perspectives into their worldview. Over my extensive experience as a physics professor, adjunct, post-doc, and teaching assistant, I developed curricula, led lectures, managed laboratories, mentored students, and served on committees, all of which have contributed to a rich and dynamic learning environment.

Drawing on my multidisciplinary background, I am able to engage a diverse student body. Throughout my teaching, I celebrate diversity, champion interdisciplinary collaboration, and encourage students to integrate concepts from all fields into their physics studies. This approach not only enhances their learning experience but also allows them to apply knowledge across various domains, fostering a holistic understanding of the subject. Previously, I have delved into topics such as biomechanics, medical laboratory sciences, and computer science. For instance, in spring 2023, I developed an advanced sports science course, which required me to broaden my disciplinary background and relate to non-traditional STEM students. By positioning my students as experts in their field, they feel encouraged to share their experiences within a collaborative learning environment.

I embrace novel teaching strategies like active learning, guided inquiry, and computational modeling. As a graduate teaching assistant, I implemented progressive pedagogical techniques, including flipped classrooms, problem-based learning, and studio physics. This hands-on experience underscored the variety of effective teaching methods beyond the conventional lecture-lab model, each presenting distinct affordances and constraints. By earning my Certification in College Teaching and participating in professional development like Physics Modeling Instruction workshops, I further broadened my pedagogical repertoire. These opportunities keep me in-tune with the educational landscape and cutting-edge teaching methods in my field. Therefore, I view continual professional development and life-long learning as integral components of my commitment to delivering an exceptional educational experience for my students.

Getting feedback from students, self-reflecting, and adapting curricula to fit students' needs is critical in being a successful teacher. Recognizing the dynamic nature of education, I regularly seek feedback from students through mid-semester anonymous surveys, ensuring that I can tailor my instruction to meet their evolving needs. This practice, informed by years of tutoring and mentoring, reflects my belief that a versatile, inclusive, and reflective educator is best equipped to facilitate a positive learning experience for every student.

In conclusion, my teaching philosophy is anchored in the belief that physics is a gateway to understanding the world, and through innovative and reflective teaching practices, I hope to inspire and empower students to navigate the complexities of their academic journey and beyond.