

***Educational Philosophy***

As a science teacher, the laboratory and nature were my favorite places to teach students, because in these spaces, my students' observations initiated the learning. One such example was a lab experience in an Introductory Biology course I taught annually, aimed to build an understanding of the relationship between structure and function in living things.

Following our study of macromolecules, I introduced students to enzymes as a type of protein molecule whose role is to aid in chemical reactions. The lab experience focused on an enzyme found in plant and animal tissue, called catalase, which degrades hydrogen peroxide, a harmful by-product of cellular reactions. Using their previous knowledge, students were asked to formulate a hypothesis, design a model and test their ideas in order to determine the ideal conditions for the enzyme's function.

By directly experiencing and measuring the reaction rates in a variety of conditions, students became creators of their own understanding. A common misconception holds that even in living things, heat increases the rate of chemical reactions. Students invariably observed that increased temperature does not necessarily speed up the rate of reaction, causing some appropriate dissonance. This dissonance ripened the ground for learning, naturally leading students to make inferences and to construct their own understanding of what might be happening. Students had to reconcile what they already knew about kinetic energy, collisions between molecules, and the tertiary structure of a protein molecule with the observations they were making.

Once they gathered enough data, a "colloquium" was held in which the class shared and discussed their findings. As their teacher, my role beyond posing the big questions (what are the ideal conditions for catalase function; why might that be; and what else would you like to/need to know?) was to facilitate the conversation, rather than directly answer the questions. I aimed to help them wade through the messiness. I listened, remained patient, and guided the discussion back to the main questions as they grappled with their confusion. When a student hit on some of the key concepts, and how they relate to one another, my role was to hone in or probe a little further. While students didn't learn any scientific terms at this stage, they were learning to articulate what they knew in their own language, giving significance to their knowledge. When the time came, students could meaningfully layer the concepts of denaturation, activation energy, and the fit of enzyme and substrate onto the experiment they conducted. These terms then became alive and internalized for them.

My role as a school leader echoes the approach that I've taken in the classroom. I believe that at the root of successful and joy-filled classrooms is teachers' own inspiration and engagement with the content they teach. Individualized support programs for professional growth, including goal setting and coaching, enable teachers to approach their craft and subject matter with ongoing curiosity. These opportunities improve pedagogical practice, develop a teacher's creativity, and build a sense of purpose.

A few years ago, I asked the Middle School faculty to undertake the challenge of planning an immersive learning day for our students to practice and deepen their social and emotional skills. Initially, teachers were overwhelmed as they grappled with what kind of workshops they might offer and how the entire day would fit together. I made time to connect directly with teachers for this work. We met individually and in small groups, I established a small support committee, and we broke the planning into manageable, discrete sections. In this process, each faculty member found a way to create a distinct workshop aimed at developing self-awareness and connection among the student body.

Teachers need to feel known and taken care of—just as students do. For school leaders, this means having a presence and hand in the daily life of the school day, through class visits and more casual interactions. When teachers feel supported by the School's leadership, the resulting sense of trust and good will enables teachers to maintain a growth mindset that further contributes to a dynamic learning environment.

Good schools certainly have a responsibility to develop a breadth of knowledge in its students. But what students take with them for much longer are the habits, methods and love for learning that curiosity engenders. If schools provide the best possible opportunities to help our students wonder, and figure out how they learn, they will be self-aware and empowered to learn throughout their lives, and our work will be well done.