

Teaching Philosophy

To me, the ultimate goal of education is to spark a pursuit of knowledge for my students. If a student walks out of my class excited to learn more, I think I was successful as an educator. My secondary goal is to prepare my students to be able to take what they learn in my class and apply it to the outside world. Computer science is a rapidly changing field. To be successful in it, a student must be able to use critical thinking skills and transfer what they learn far beyond what is taught in class. My teaching philosophy is to achieve both these goals through Project-Based Instruction (PBI).

By having a project-based classroom, I am preparing my students for the outside world by simulating industry work in which they would be given some starter code and an end result. The specifics of how they accomplish this goal would be completely up to them, so they are forced to think creatively and figure out the technical details on their own. From my experience, students learn best by doing, by building on prior knowledge, and by asking questions that they genuinely want to find the answers to. Through PBI, students are able to take their prior knowledge and apply it to new problems. If what they try doesn't work, they must adjust their thinking and try a different approach. This process of building hypotheses and testing them is how professionals in all STEM fields work to find new information and thus is how I structure my classes. Additionally, by allowing students to engage in trial and error, they are more invested in learning about the issue and understand the solution much more deeply when it is revealed to them.

Cooperation and group work is another core feature of how students learn. In my classes, I make my more challenging projects pair-programming. While there are many benefits to pair programming, I include it in my teaching because I have found that students may be able to explain concepts to each other better than I can, simply because they are around the same skill level and use the same "language." This also benefits the student who is explaining, as teaching a concept to others is a very beneficial way to solidify one's own understanding. Finally, by allowing students to collaborate, they are gaining the social skills that they need to communicate with others in the industry.

Through these projects, I can assess how well my students understand the concepts by measuring the quality of project implementation, by checking on their progress while they are working, and by giving them independent-inquiry projects in which the students need to use what they learned in class and apply it to something that interests them. This last strategy is especially effective because students become encouraged to learn past what is taught in the classroom to create something they are proud of sharing. I also assess students during collaboration by asking them to explain and build on other students' ideas and by watching them teach concepts to each other.

Overall, while I am continuously trying to improve as a teacher, my teaching philosophy of Project-Based Instruction builds on how I found students naturally learn best while encouraging my students to learn beyond the classroom and giving them the skill they need to be successful in the industry. I truly believe that through this method I can spark a pursuit of knowledge in my students that they will hopefully carry with them for the rest of their lives.