

As an instructor, I have two fundamental goals in the way that I teach.

1. Use as many of the best practices in teaching available to communicate the fundamental skills.

Research on how students learn in the sciences has increased in volume and intensity, especially around the STEM education movement nationally. However, research in the best ways that students in computer science learn best still lags the other science disciplines that have had decades more activity and study. I seek to understand how to answer questions related to the student characteristics that influence learning and how I, as an instructor, can assist my students in the learning process. Flipped classroom concepts, discovery learning, and problem-based learning are some of the newly-identified techniques that I continually seek to incorporate in my courses to assist student learning. All of these techniques are only considered after an understanding of the fundamental philosophy of education.

2. Build students who can become self-directed, life-long learners without the instructor.

The field of computer science is constantly expanding, with new discoveries being made in the field and in the learning about the field nearly hourly. Students who enter my classroom expecting to learn everything about the subject through a passive absorption of presented material will be in trouble in short order. By encouraging students to bring current events into the classroom, we can engage in understanding where the field of computer science is going and what are the best sources to follow to be fully connected with the future directions. Research in education has demonstrated that students must be active in their learning to achieve the greatest benefit from it. My goal is to help students to construct knowledge without my intervention in guiding them to it. I do this by designing classroom activities that promote students to interact with outside research sources, course materials, and their peers. I am fond of using a tool of problems on the outside of an envelope and having small groups attempt to solve the problem on the front of the envelope, submit their answers into the envelope, and having the originating group review the submitted solutions of the class and make the best selection, ultimately explaining why they made that choice. In this manner, group work in the classroom is able to be used to engage students and help them realize that there are more sources that can be consulted than just the instructor.