Teaching Active Participation and Inclusion

My goal as educator is to shepherd our youth toward being better people by building knowledge, skills, and empathy. I encourage students to be creative, to actively participate, and to cherish mutual difference. I like to teach a range of courses: introductory, to bring students into our fields; mid-level, engaging students with skills and each other; advanced, to share and develop cutting edge research acumen. Workshops on teamwork and inclusion address how cooperative work is hard. Team projects require students to deal with each other.

I emphasize project-based learning, constructivism, learning through doing, because I find that it's more rewarding. Knowledge and skills stick a different way in the mind when you use them in making. Project-based learning stimulates thinking about what skills are for, in situated contexts. Projects provoke creativity in formulating problems and plans. I teach students to ask good questions, not just to know right answers.

Teaching is a two-way street. *I* continuously *learn* through teaching. I learn through teaching, because its situated contexts provoke me to think on my feet about what students need, how to explain, how to impart, and how to inspire. Student participation gives a professor intellectual and emotional challenges, which stimulate growth. I work to keep my teaching alive, to be the student through teaching. I work to keep fulfilling my intention to continuously make the world a better place, and myself a better person, through community.

In the future, I intend to design and offer innovative introductory courses in computational / informational literacy. To do so, I will draw on my backgrounds in the arts, design, the humanities, and the social sciences, in addition to computer and information science and engineering, and human-computer interaction (HCI). I will present computing / information as culture. I will explicitly incorporate diversity, inclusion, and ethics. I will craft creative individual and team assignments, in connection with the news and popular social media, in order to draw people with diverse backgrounds into active roles in computing, data science, and information.

I support and advise undergrad and graduate student researchers. I involve my advisees as participants and collaborators in all phases of research: (1) design; (2) building probes; (3) collecting data; (4) data analysis; (5) writing papers; and (6) writing proposals. They learn skills across this gamut, in proportion to their effort.

I teach undergraduate 'half capstone' design (aka *Programming Studio*), graduate Human-Centered Computing, and advanced seminars. Half capstone initiates students' transition from skills to project-based learning. I overhauled the curriculum, forming an interdisciplinary course—integrating software design, interaction design, visual design, and experience design—with qualitative methods and agile task analysis. One project requires teams to design and build an engaging multi-player game—using JavaScript, Node.js, MongoDB, WebSockets, CSS, and HTML—so it runs in a web browser. Student response is motivated and creative.

While teaching Programming Studio, my most profound experience as a teacher emerged. Students struggle to work in teams. I find, disproportionately, that female students show up in my office with bad team experiences. I am ethically compelled to make computing courses as places where people who are underrepresented become inspired, not discouraged. In response, I iteratively create and facilitate a participatory inclusion workshop, *Teamwork: Gender + Race* (See Diversity Statement.)

I collaborated to create CSCE 655 Human Centered-Computing (HCC), a graduate human-computer interaction methods course, to introduce iterative design, prototyping, visual / interaction design, evaluation, data collection and analysis, information visualization, computer-supported cooperative work, social media, game design, and ubiquitous computing. Texas A&M CSE adopted HCC as a core graduate degree requirement.

I periodically teach seminars to engage advanced student participation in cutting-edge research. The fields are interdisciplinary. Participants integrate fundamentals with prior work. I worked to canonize Advanced Seminar in Human-Centered Computing and Information. Students can repeat this course; its topic differs in each offering. I share the mechanism with colleagues in HCI, graphics, visualization, and information.