Philosophy of Teaching

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The same enthusiasm to human-centered design that propels my research also motivates my teaching. Design is an inherent human character and ubiquitous endeavor dating to early ages. It is the central activity of engineering and a major propellant of our prosperity. However educators struggle to introduce human-centered design into conventional curricula. It is my goal to foster future polymaths, who can optimize human well-being and the overall system performance.

Our grand challenges are dynamic, fast evolving and cross-disciplinary. Economic, socio-political and ecological considerations will impact our prosperity. Engineers have great potential to improve mankinds quality of life. This requires understanding the human element in complex coupled system. Therefore, I see my teaching as a key contributor for preparing future engineers.

I focus on teaching fundamental disciplines of engineering at the intersection of design, technology, business and behavioral sciences. Digital design tools and concept-to-construction type design skills are essential for future engineers. In this context, studio-type learning is the ideal environment to foster theoretical and applied skills with sufficient mastery. In contrast to conventional teaching environments, it establishes small group discussions and social interaction.

Bringing research into classroom is important part of my teaching philosophy. I also noticed that real-life examples and daily-life context excite students. In my Design courses I use my own Computer Aided Engineering models and Digital Human Modeling examples. I guide students to manipulate dimensions of an assembly workstation, applied loads and postures to reduce compression forces inline with NIOSH equation. This fosters self-learning through merging engineering fundamentals with simulation skills. After class, students take their in-class experience and apply it to validate new design ideas. Later, I provide a complex design problem taken from my research work. This challenges the expertise developed previously and germinate novel design strategies.

Topics that I am interested to teach are Digital Human Modeling, Human Factors, Design theory and Methods, Computer-Aided Design/Engineering, and Sustainability. My future plans include developing cross-disciplinary courses that introduce human-in-the-loop approach to assess human-compatibility in engineering, natural and social systems.

Overall, my motivation is to create a happy lifelong learning journey, so that each student can make a positive contribution to human prosperity. I want my students to explore their intellectual capability. I love what I do. I reflect my passion by illustrating my own enthusiasm for the topic.