Abstract

Why should you care about the conceptual frameworks that underlie research on teaching and learning? I propose that you wouldn’t consider redesigning a bridge without understanding the underlying principles that support and affect it in the first place. Wouldn’t you look to current models of mechanics, materials science, civil engineering, geology, maybe even climatology to inform your questions about its form and function? Those specialties would help you understand the kinds of data to gather, the questions to ask, the variables to consider. They would save you time and effort by focusing your attention on key components that your new design should investigate. They would help you interpret the data you collect and make decisions about what to do at each stage of the process.

The same is true for redesigning educational systems. The underlying models for education come from psychology, sociology, communications, and other behavioral sciences. Just as models from the disciplines listed in the previous paragraph would in engineering, the models in the fields in this paragraph will help researchers in engineering education to save time and effort and to ask reasonable questions informed by what is known about the influences on human learning.

What follows in the sections of this guidebook is a series of question clusters about education that a group of engineering educators generated at a retreat in August of 2007 organized around the HPL metaframework. Each set of questions used to represent the kinds of theoretical frameworks that might be appropriate to consider in searching for an answer. The framework descriptions are not exhaustive, but they are well-grounded in educational theory as it stands today.

Bio

Marilla Svinicki began her professional life as an experimental psychologist, but was soon drawn to educational psychology because of the promise it held for improving instructional practices at all levels. She received PhD in psychology from the University of Colorado before going to teach at Macalester College in St. Paul. In 1973 she moved from there to Texas and joined a research project on computer-based education as well as the newly formed Center for Teaching Effectiveness at the University of Texas at Austin. In 1990 she became the Director of that Center and a senior lecturer in the department of Educational Psychology, where she teaches graduate and undergraduate courses in cognition and learning. Her research focuses on conditions in classes that maximize learning and motivation. She is also the editor in chief of the New Directions for Teaching and Learning series as well as a widely published author and speaker in the area of faculty development and learning at the post-secondary level.

Cite this work

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