UNIVERSITY of WASHINGTON

CELT

center for engineering learning and teaching

COLLEGE OF ENGINEERING

Research Overview

CELT educational researchers work on funded research projects with colleagues from the University of Washington and across the nation to conduct research that advances engineering education. This document highlights our current research activities.

Design Learning
- Expertise
- Design context
- Problem scoping
- Representations of design
- Conceptions of design
- Conceptions of professional practice

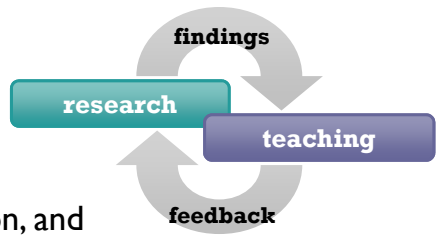
In CELT's design learning research we seek to characterize how engineering students and practicing professionals solve engineering design problems, to understand the effectiveness of current approaches engineering design instruction, and to ultimately develop and evaluate instruction to enhance the learning of engineering design.

Knowledge Integration of Learners
- Knowledge integration – within and across domains
- Conceptions of profession
- Portfolios
- Reflective practice
- Assessment and feedback

In our knowledge integration research we seek to discover how engineering students incorporate knowledge gained through classes and other learning experiences to better realize the relationship of engineering knowledge with the development of a professional engineering identity. Developing an awareness of the effectiveness of current methods of promoting knowledge integration provides opportunities to evaluate instruction and to enhance engineering education.

Integration of Research and Teaching
- Teaching challenges of engineering faculty
- Strategies and resources for engineering educators
- Inclusive teaching – integration of diversity
- Maintaining an active test bed

The instructional challenges of integrating research into the teaching of engineering educators directly correlates to the effectiveness of instruction and curricular innovations. We seek to understand how to help engineering faculty continuously enhance their teaching effectiveness, and how to incorporate research on engineering student learning into such efforts.



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