This project explores how computer tools can enhance engineering education. Students are challenged with a sequence of engineering tasks to design their own model houses and improve their energy efficiency, in which computer tools can be used to support scientific inquiry and engineering design. A comparison study is being conducted to test the efficacy of the computer-based intervention.

Research Context: The EEE Curriculum

Design Principle: “Knitting” Science & Engineering in Project-Based Learning

Chapter One: Build and Test a Standard House

Chapter Two: Heat Transfer Basics *

Chapter Three: Design and Build Your Own House §

Chapter Four: Modify Your Own House

The Intervention

* Energy2D

"I liked watching the simulations, you could see what actually happens — you can’t see it like that in a book." - Student

§ Energy3D

"The 3D designing was very helpful as we could customize the house as we wanted to or as we needed to." - Student

Student Products (Spring 2012)

176 students from 8 classes (one school)

Visit us: energy.concord.org

Design Rationales

Preliminary Findings

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