

A Research-Based Approach to the Learning and Teaching of Physics

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In recent years, researchers in college and university science and math departments have carried out systematic investigations into student learning at an increasing pace. This work involves exploring the process by which students come to understand concepts, and uncovering the difficulties and obstacles encountered by students as they learn. The ultimate outcome of this work is the development of new and more effective instructional materials and pedagogical strategies. I will discuss this work in the specific context of physics education research, and I will illustrate the process by discussing an ongoing investigation into student learning of thermal physics.