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Physics Education Research and its Impact on Classroom Instruction[1]

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In recent years systematic investigations into student learning of physics have been carried out at an increasing pace, particularly at the undergraduate level. This work, broadly known as "physics education research," involves exploring the process by which students come to understand physics 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 outline the principal goals and methods of this research and show how it can lead to improved learning in the classroom. I will illustrate the process by discussing an ongoing investigation into student learning of thermal physics.

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