

NEF12-2012-020008

Abstract for an Invited Paper
for the NEF12 Meeting of
the American Physical Society

What do the students need?

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The instruction we offer students, at any level, presumably reflects what we believe will help them understand physics. But we don't often subject our beliefs to scrutiny. Most physics instructors work from common sense assumptions about what students need: clear explanations, demonstrations, motivation and practice. As in physics, however, common sense ideas (e.g. "objects move because they are pushed") aren't always correct. I will present evidence that these usual assumptions are insufficient and offer an expanded set of possibilities, focusing in particular on how students understand knowledge and learning. In some cases what students most need is help taking a different approach to learning, a "refinement of everyday thinking" (Einstein, 1936) rather than a reception of information.