

Abstract Submitted
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The Effects of Eliminating Lectures in Favor of In-class Collaborative Learning Experiences DEBRA KRAUSE DANDANEAU, ERIN CARACAPPA, Dept. of Physics and Astronomy, University of Tennessee, Knoxville — To meet the objectives of a general-education conceptual physics course (namely to “reduce students’ fears of science and to convey to them a substantial understanding”¹), students must be engaged in the learning process. Hands-on work and peer instruction are thought to be most effective, and when such methods are used, the course can reinforce research-based pedagogy to preservice teachers. Often, due to time constraints, interactive engagement is nonetheless auxiliary. In the current conceptual courses at our institution, the lecture has been virtually eliminated in favor of collaborative in-class activities, which make use of free, online, research-based simulations.² Students perform experiments using simple materials when simulations are not available or can be supplemented. The course will be described and compared to a lecture-based course, in terms of attitudes improvement and learning gains.

¹How Things Work text description from L. Bloomfield’s site:
<http://howthingswork.virginia.edu/course.html>

²Primarily those on the PhET site: <http://phet.colorado.edu/index.php>

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