Guide

Interactive Lecture Demonstrations

Indicates a research-demonstrated benefit

Overview

Worksheets for use in lecture. Students predict results of demos, discuss in small groups, observe results, compare with predictions and explain.

Type of Method	Instructional strategy, Curriculum supplement
Level	**Designed for:** Intro College Calculus-based , Intro College Algebra-based **Can be adapted for:** High School
Setting	**Designed for:** Lecture - Large (30+ students) **Can be adapted for:** Lecture - Small (<30 students), Studio
Coverage	Many topics with less depth
Topics	Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical
Instructor Effort	Low
Resource Needs	Cost for students, Laboratory equipment for instructor to do demonstrations, but not laboratory equipment for all students
Skills	**Designed for:** Conceptual understanding , Using multiple representations
Research Validation	**Based on research into:** theories of how students learn , student ideas about specific topics **Demonstrated to improve:** conceptual understanding **Studied using:** research at multiple institutions , research by multiple groups , peer-reviewed publication
Compatible Methods	Peer Instruction, PhET, UW Tutorials, JiTT, Ranking Tasks, CGPS, Physlets, Context-Rich Problems, RealTime Physics, Workshop Physics, TIPERs, ABP Tutorials, SCALE-UP, OSP, SDI Labs, OST Tutorials, Thinking Problems, Workbook for Introductory Physics, LA Program, CAE TPS, MBL, CPU, SCL, TEFA, Tools for Scientific Thinking, Tutorials, Clickers
Similar Methods	Peer Instruction, RealTime Physics, Workshop Physics, CAE TPS, MBL, TEFA, Tools for Scientific Thinking

Developer(s)	David Sokoloff and Ron Thornton
Website	http://www.wiley.com/WileyCDA/WileyTitle/productCd-EHEP001706.html
Intro Article	10557
Intro Article	Use of interactive lecture demonstrations: A ten year study

Resources, training, & community

Guide: SERC Guide to ILDs

Articles about ILDs:

- David R. Sokoloff and Ronald K. Thornton, Using interactive lecture demonstrations to create an active learning environment, The Physics Teacher 35, no. 6 (1997): 340.
- Manjula D. Sharma et al., Use of interactive lecture demonstrations: A ten year study, Physical Review Special Topics - Physics Education Research 6, no. 2 (October 8, 2010): 020119.
- Ron Thornton, Web-delivered interactive lecture demonstration: Creating an active science learning environment over the Internet, *Forum on Education of the American Physical Society, Fall 2003*.
- Wittmann and van Breen, On the dissemination of a proven curriculum: RealTime Physics and Interactive Lecture Demonstrations, 2002, http://perlnet.umephy.maine.edu/research/Wittmann2002RTPpaper.pdf
- Interactive Lecture Demonstrations, in E. F. Redish, Teaching Physics with the Physics Suite (2003), pp. 135-137.

Workshops:

The developers of ILDs regularly offer in-person workshops, with dates regularly updated on their website.