




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](#).