



PER User's Guide

Physics Education Research

Evidence-based resources for teaching physics

PI/Ψ *Peer Instruction for Quantum Mechanics*

🎓 Indicates a research-demonstrated benefit

Overview

A collection of multiple-choice and short answer questions for discussion and reflection in an upper-level undergraduate quantum mechanics course.



Type of Method

Instructional strategy, Curriculum supplement



Level

Designed for: Upper-level Undergraduate 🎓

Can be adapted for: Graduate School 🎓, Intermediate



Setting

Designed for: Lecture - Small (<30 students) 🎓, Lecture - Large (30+ students), Recitation/Discussion Session, Studio



Coverage

Few topics with great depth, Many topics with less depth



Topics

Modern / Quantum



Instructor Effort

Low



Resource Needs

Projector



Skills

Designed for: Conceptual understanding 🎓, Making real-world connections, Metacognition



Research Validation

Based on research into: theories of how students learn 🎓, student ideas about specific topics 🎓

Demonstrated to improve: conceptual understanding 🎓

Studied using: cycle of research and redevelopment 🎓, student interviews 🎓, classroom observations 🎓, research at multiple institutions 🎓, peer-reviewed publication 🎓




Compatible Methods

[Peer Instruction](#), [PhET](#), [JiTT](#), [CGPS](#), [Physlets](#), [SCALE-UP](#), [CAE TPS](#), [New Model Course](#), [TEFA](#), [CU Modern](#), [CU QM](#), [QuILTs](#), [Paradigms](#), [Clickers](#)



Similar Methods

[Peer Instruction](#), [Workbook for Introductory Physics](#), [CAE TPS](#), [TEFA](#), [CU QM](#), [QuILTs](#), [Clickers](#)

 **Developer(s)** Chandralekha Singh and PER team at the University of Pittsburgh

 **Website** <http://www.phyast.pitt.edu/~cls/peer/>

Teaching materials

You can access the resource material, which includes the "ConcepTests" for assessment with continuous feedback to the students, standardized assessment tools, reflective questions and the material for Just-In-Time Teaching (JITT) for quantum mechanics courses, by contacting the developer at clsingh@pitt.edu.

Resources, training, & community

Overview: [Peer Instruction for Quantum Mechanics](#)