Student-Generated Scientific Inquiry

Indicates a research-demonstrated benefit

Overview

A curriculum for pre-service teachers that engages students in crafting and investigating their own scientific questions in topics that span the scientific disciplines. The course is modeled on a research lab, with students working on projects in small groups and sharing findings during whole-class "research-group" meetings. While students will learn a significant amount of content, the focus is on developing students' abilities to engage in open scientific inquiry.

Type of Method	Instructional strategy
Level	**Designed for:** Teacher Preparation **Can be adapted for:** High School, Intro College Conceptual, Other Science
Setting	**Designed for:** Lab **Can be adapted for:** Lecture - Small (<30 students), Studio
Coverage	Few topics with great depth
Topics	Mechanics, Electricity / Magnetism, Waves / Optics, Thermal / Statistical, Astronomy, Other Science
Instructor Effort	High
Resource Needs	Lab equipment for student use - professional
Skills	**Designed for:** Understanding how physics relates to the real world , Think like a scientist , Enjoyment of physics , Representing knowledge in multiple ways , Designing experiments , Creativity, Autonomy **Can be adapted for:** Conceptual understanding of physics content, Coherent framework for physics
Research Validation	**Based on research into:** how students learn **Demonstrated to improve:** beliefs about physics **Studied using:** beliefs pre/post exams , student interviews , video of students

Compatible Methods	PhET, JiTT, Physlets, SCALE-UP, OSP, LA Program, CPU, Energy Project, Responsive Teaching
Similar Methods	Energy Project, Responsive Teaching
Developer(s)	Leslie Atkins
Website	http://phys.csuchico.edu/~ljatkins/SGSI/
Intro Article	12971
Intro Article	Student-Generated Scientific Inquiry for Elementary Education Undergraduates: Course Development, Outcomes and Implications

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