11-2013

Science, 7th graders, and a Stream: An Integrated, Experience-based Science Course for Honors Students

Walter S. Borowski
Eastern Kentucky University, w.borowski@eku.edu

Malcolm P. Frisbie
Eastern Kentucky University, malcolm.frisbie@eku.edu

Tara Shepperson
Eastern Kentucky University

Linda Frost
Eastern Kentucky University

Recommended Citation

Borowski, W.S., M.P. Frisbie. T.L. Shepperson, L. Frost, L.E. Coyne, A.J. Jeck, 2013. Science, 7th graders, and a stream: An integrated, experience-based science course for honors students. Kentucky Honors Roundtable, Fall 2013 Conference, October 4th-5th 2013, p. 18.

NCHC Session: Teaching and Learning/Pedagogy within Honors or Relevant to Honors

Science, 7th Graders, and a Stream: An Integrated, Experience-based Science Course for Honors Students

Walter S. Borowski	w.borowski@eku.edu
Lauren. E. Coyne (student)	lauren_coyne@mymail.eku.edu
Malcolm P. Frisbie	malcolm.frisbie@eku.edu
Antony D. Jeck (student)	anthony_jeck@mymail.eku.edu
Tara L. Shepperson	tara.shepperson@eku.edu

We report pedagogical results from a novel, integrated, experience-based science course for honors students funded by the National Science Foundation (NSF). Key aspects of the course are: (1) instruction in the natural sciences adopting a regional context; (2) investigation of the water quality of a local stream involving all aspects of a scientific study from planning to data collection and analysis to presentation; and (3) direct mentoring of underprivileged seventh-grade students by honors students in project activities, including several trips to campus for laboratory work and presentations. The course is meant to provide high-quality scientific teaching in honors and serve as an improved model for general-education science courses. Moreover, we train honors students to become self-directed learners by giving them responsibility in engaging and teaching at-risk, middle-school students while promoting STEM (Science Technology Engineering Math) disciplines. We use pre- and post-course tests, attitudinal surveys, and focus groups to examine the efficacy of the course in fostering understanding of science concepts, increasing awareness of the geographic region, and improving attitudes toward science for honors students in the course, for middle-school students, and for honors students not in the course (control group).

Session Description

We report pedagogical results from a novel, integrated, experience-based science course for honors students funded by the National Science Foundation (NSF). The course seeks to improve science instruction and attitudes toward STEM disciplines for both honors students and underprivileged seventh-grade students by using honors students as learning mentors.