

CHANGES IN STUDENT ATTITUDES AFTER COMPLETING A YEAR OF INTRODUCTORY GEOLOGY COURSES

Introductory courses are an opportunity to improve student opinion and interest in the subject. Small classes with a lab component have been shown to improve student opinion and attitude towards the sciences. However, many institutions teach introductory science over two semesters in larger, lecture-based courses with minimal or no lab component. This study investigates changes in student attitudes after completing a full academic year of introductory geology classes in a stand-alone course using popular textbooks and common pedagogical approaches.

We administered the Colorado Learning Attitudes about Science Survey (C-LASS) to students in introductory physical geology and historical geology courses in the 2007-2008 school year. The C-LASS consists of multiple correlated statements in five categories: personal interest, real world connection, problem solving, sense making/effort, and conceptual connections. Students respond using a Likert scale (agree-disagree). We report the percentage of students that agree with the expert view (favorable). Surveys were administered at the beginning and end of each semester.

Students began the academic year with a moderately positive attitude (58%) towards learning geology. Favorable attitudes were strongest towards real world connections (65.9%) and problem solving (70.1%). Few students begin with favorable attitudes towards solving complicated problems (33.5%) and learning geologic concepts (35.9%). After completing two semesters, students' attitude overall did not significantly change, with 56% students responding favorably. The categories with the highest percentage of favorable responses were sense making (64.5%) and problem solving confidence (60.5%) and least favorable in problem solving sophistication (37%) and conceptual learning (33.9%). For categories such as personal interest and real world connections, fewer students viewed geology favorably at the end of the year than when they began. These preliminary results suggest that students are completing a year of introductory instruction with little changes in their attitudes towards learning geology from where they started.