

Submissions Abstract Book - All Papers (All Submissions)

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Chaired by Rosemary Deem

Wed 11 Dec 2019

15:45 - 16:15

Aligning Student Aspirations and Workforce Applications: A Curriculum Design for Widening Participation in Higher Education

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Research Domain: Access and widening participation (AWP)

Abstract: The National Center for Research in Geography Education (NCRGE) is currently conducting fundamental research to address longstanding challenges facing the geography discipline with regard to achieving broader diversity and inclusion in the undergraduate curriculum and workforce. Prior research in science education suggests a positive association between conveying applications of science and students' attitudes toward science and interest in science careers. This presentation reports the results of a pilot study that explored this relationship in the context of undergraduate geography education. Surveys and interviews with students enrolled in an introductory geography course gathered data on students' career aspirations and attitudes toward geography (i.e., perceived utility of geography, interest in geography, and confidence to do geography). Next, applications of geography were conveyed to students using workforce data obtained from a sample of geographers employed in various public and private sector positions. We then administered a post-test survey to measure potential gains in student attitudes. The outcomes of this study will inform efforts to transform the undergraduate geography curriculum in a manner that accounts for the diverse aspirations and job prospects of students.

Paper: Introduction

The National Center for Research in Geography Education (NCRGE) is currently conducting fundamental research to address longstanding challenges facing the geography discipline with regard to achieving broader diversity and inclusion in the undergraduate curriculum and workforce. Our SRHE presentation will report the results of a pilot study that will be completed in two phases at Texas State University (during the summer 2019 academic term and the fall 2019 academic term). The pilot study marks the beginning of long-term research to explore how the geography discipline can support a more diverse and inclusive undergraduate curriculum and post-graduate workforce. The goal is to produce a replicable curriculum model to help widen participation in the discipline while potentially informing similar efforts in other academic fields.

Disciplinary Context

Contemporary disciplinary data provide a baseline for measuring progress toward our goals for enhancing diversity and inclusion in undergraduate geography programs. Proportions of women and minorities in geography have changed very little over the past several decades. According to the latest available data (2016; see Keen 2018a, 2019b), 75% of undergraduate geography students are White Non-Hispanic. The largest minority group among undergraduate geography students is Hispanic/Latino (8.9%). Gender balances among geography students are 60% male to 40% female among undergraduate students. Geography students are considerably more male-dominated than the overall student population (44% male). This lack of diversity and inclusivity implies a long-overdue need for research to inform new approaches to undergraduate teaching, advising, and workforce preparation.

Research Objectives

Our pilot study explores the following research question: How are student attitudes toward geography influenced by learning geography's applications to everyday life and wider contexts?

Research on student motivation in science education underscores the importance of understanding student attitudes for building a more diverse and inclusive discipline (Maltese & Tai, 2011; Morgan, Gelbgiser, & Weeden, 2013; Osborne & Dillon, 2008; Savelsbergh et al., 2016; Tai, Qi Liu, Maltese, & Fan, 2006). This research suggests attitudes toward science, such as students' interest in science, perceived utility of science, and confidence to do science, are important factors shaping students' career choice and further education in science.

A large-scale assessment study in science education (Sheldrake, Mujtaba, & Reiss, 2017, p. 167) concluded that "conveying the wider applications of science to students was the only teaching approach to consistently and positively associate with students' perceived utility of science and other attitudes." On the basis of their findings, the authors suggest that "conveying the wider relevance of science to everyday life and to wider contexts may help foster students' interest in science and perceived utility of science, which may then help foster students' aspirations towards science careers" (p. 183). This strongly implies a need for research that develops empirical measures of a subject's relevance from the perspective of students.

Methodology

To build on this prior work, our research seeks evidence of the extent that conveying geography's relevance to everyday life and to wider contexts improves students' perceived utility of geography, interest in geography, and confidence to do geography. Our research design draws on prior work on evaluating the dimensions of geography learning in higher education (Klein & Solem, 2008). Four types of data will be collected in introductory geography courses scheduled over two academic terms at Texas State University (summer 2019 and fall 2019): (1) semi-structured interviews, (2) analysis and presentation of workforce data, (3) written reflections, and (4) pre- and post-test surveys.

In each academic term, we will begin the pilot study by conducting semi-structured interviews with students enrolled in introductory geography course at Texas State University. Questions will address interviewees' career aspirations, as well as their goals for the course. Workforce data will consist of interviews with professional geographers and statistical analyses of workforce data from the Bureau of Labor Statistics (BLS). Over both academic terms, applications of geography will be conveyed to students using workforce data obtained from a sample of geographers employed in various public and private sector positions. Based upon student responses, the course instructor will integrate content tailored to the diverse aspirations gleaned from the semi-structured interviews.

Periodically, students will be prompted to provide brief descriptions on 3x5 cards regarding how the current topics may or may not align with their aspirations. These discussions are intended to determine which subject matter resonated with participants and why. To measure potential gains in student attitudes, we will administer a pre-test survey at the semester's beginning, as well as a post-test survey. Surveys will supplement semi-structured interviews by assessing change in students' career aspirations and attitudes toward geography. T-tests based on Likert scale items will statistically measure potential change in students' perceived utility of geography, interest in geography, and confidence to do geography. We anticipate that the outcomes of this study will inform future efforts to replicate data collection in cooperation with other undergraduate geography programs.

Implications

NCRGE recognizes that any attempt to diversify geography in higher education will be limited without considering the well-documented "gap" between school and university geography education (Bednarz, 2003, 2016). Geography remains a discovery major for the vast majority of students pursuing an undergraduate degree. While attention to the quality of undergraduate education is essential, more must be done to communicate the value of geography to younger cohorts of students. One way by which NCRGE will address this challenge is by connecting the workforce data

acquired in this project to the student aspirations data currently being gathered and analysed by our ongoing Powerful Geography K-12 educational initiative. This effort will, for the first time, create a “bridge” between school and university geography that facilitates an integrated system of geography education in the United States.

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