Plan Overview

A Data Management Plan created using DMPTool

Title: Collaborative Research: GP-IMPACT: I See Me! Skill-Job-Course Connection Vignettes to Increase Student Interest in Geoscience Careers

Creator: Daphne LaDue

Affiliation: University of Oklahoma (ou.edu)

Principal Investigator: Daphne LaDue

Data Manager: Daphne LaDue

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This proposed work is to create 31-47 short, 2-3 minute videos that link introductory-level geoscience course content to real geoscience careers and the diverse people working in them. We will study classes that are both using and not using these videos, fielding pre-post course surveys about knowledge and interest in geoscience careers, where they obtain career information, self-efficacy about ability to succeed as a scientist, stereotypes of scientists, typical grades in STEM classes, employability of geoscientists, earning potential, societal relevance of geoscience, personality fit, the importance of flexibility in a career, and stature of geoscientists. Focus groups of a sample of students from these classes will help us further probe and understand student interest in geosciences in ways surveys cannot elicit well. We will also conduct interviews with faculty teaching the study courses to understand their teaching philosophy, what career information tools they may be using, and how they keep up with changes in the landscape of geoscience careers available to their students.

Types of Data

This project will result in (1) a video and storyboard template for creating these videos (iMovie template, Word document storyboard); (2) videos of geoscience professionals (UNAVCO video production team believes late-model iPhones provide sufficient quality); (3) pre-post student surveys (identifiable data in Qualtrics and exported Excel files that will have identiers removed); (4) focus group discussion audio and/or video (audio in .m4a); and (5) faculty interview audio (.m4a).

Data will be captured as follows. Video interviews with geoscience professionals will be captured with late-model iPhones held in small tripods. Supplementary audio may be captured with small audio recorders. Pre-post survey data will be collected with Qualtrics, the market leader among data collection and suvey research platforms. Focus groups and faculty interviews will be at least audio recorded; there may be more than one recorder for focus groups to assure all voices are audible in recordings.

Other data used in the project would be career information data for the video storyboards. These would come mainly from a variety of publically available sources.

Data will be processed with iMovie, Excel, R, and python.

Quality of data will be done in part through validity testing of our tools with OU courses early in the project. We will restrict pre-post survey responses to valid email addresses provided by faculty; each student will be provided a unique URL to access the survey (this also allows reminders only to those who have not completed the survey). Two experienced researchers will conduct the focus group sessions and faculty interviews.

Our career videos will be given metadata tags describing course content, geoscience field, job sector, job skills to allow them to be easily searchable.

Our pre-post survey data will be stripped down to citable constructs in career interest literature, and could include constructs that result from this study, to allow social reseachers to use de-identified survey data. Our pre-post survey instrument will be shared upon request.

Focus group and faculty interviews will be retained in audio and/or format, so will not be de-identifiable and cannot be shared. Notes derived from these interviews will not contain identifiers and will be shared if requested. Our

focus group and faculty interview guides will be shared upon request.

Videos produce through this grant will be available through UNIDATA, YouTube, TeacherTube, and UNIDATA's RAMADA server. UNIDATA will make the video template and storyboard available on a cloud computing system like Google Drive or Dropbox. Pre-post survey data, as described in the previous section, will be made available through OU's SHAREOK Repository site.

We anticipate that other researchers in career interest and decision making, within and beyond geosciences, may be interested in this data. We will produce at least a conference presentation by which other researchers may cite our data.

Our data will be collected through Year 3 of the proposed project, and has the greatest utility when considered in whole. Therefore we will make our data available during or soon after Year 3, as we analyze and write up our findings. No restrictions will be placed on the data; it will be made available with a creative-commons open-license. Only de-identified data can be shared, and those data shared will be linked with metadata to constructs in career interest/decision literature. Intended/forseeable users are those in and beyond geosciences that research career interest and decisions of undergraduate students.

The long-term strategy for maintaining, curating, and archiving data are partly subject to YouTube, TeacherTube, and UNIDATA policies, which are at this time indefinite. We are also planning to use cloud storage such as Google Drive or Dropbox. OU's OKSHARE data policy is to retain data even if researchers leave the institution. Metadata will accompany data, as will citations by which to credit the original researchers.