ASSETT Faculty Fellows, 2020-2021
Project Report
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Teaching and Learning Geological Sciences during the COVID-19 Pandemic

Project Description

As the COVID-19 pandemic forced institutions of higher education to respond, CU Boulder maintained student learning as a high priority. However, most of the instructional faculty in the Department of Geological Sciences (GEOL), my home department, had not taught entire courses online or remotely prior to the COVID-19 pandemic. The COVID-19 pandemic imposed upon us the need to rethink our more familiar instructional methods for in-person courses. It challenged us to explore how we might translate the best of our in-person courses into remote or online courses. Furthermore, a rapid transition in instructional modalities was demanded as part of the emergency response to the quickly unfolding global health crisis. The goal of this ASSETT Faculty Fellows department-level project was to support colleagues in making the rapid shift into emergency remote teaching in March 2020 as well as facilitating their possible course redesigns for the summer and fall 2020 semesters.

To achieve the goal, this ASSETT project had three main objectives.

(1) Create a GEOL Remote Teaching Collaboratory (GEOL-RTC) for archiving and accessing resources contributed by members of the department as well as emailed to departments by other units.
(2) Using surveys, describe experiences that students, graduate student instructors and teaching assistants, and faculty had with emergency remote teaching in the latter part of the spring 2020 semester.
(3) Using *Zoom*, facilitate workshops about teaching GEOL courses using active engagement techniques remotely, teaching field geology courses remotely, and teaching synchronously in general.

Project Outcomes

The GEOL-RTC was created in March 2020 and editing access was granted to all faculty members and graduate student instructors in the Department of Geological Sciences. The motivation behind creating the GEOL-RTC was to have a community-owned and shared repository of resources that could be useful to all of us as we navigated the new experience of teaching during a pandemic. Among the resources in this collaboratory were how-to-handouts for how to use various features in *Zoom* (the version that was available in the spring 2020 semester). These handouts were accessible not only through the GEOL-RTC, but colleagues would also request how-to assistance and I was able to share these handouts with them through email. While the GEOL-RTC was an outgrowth of an immediate need to rapidly learn how to teach remotely, the surveys were administered with an eye towards helping to inform instructional decisions and planning for fall 2020 courses.

At the end of the spring 2020 semester, David Budd, a few graduate students (Abigail Eckland, Lindsay Harrison, and Liza Wernicke), and I administered, analyzed, and disseminated the results of the surveys about the experiences that students, graduate student instructors and teaching assistants, and faculty in the GEOL department had with online/remote teaching in spring 2020. The motivation behind these surveys was to share students' and instructors' experiences with emergency remote learning and teaching in spring 2020 as way to help plan possible course redesigns for fall 2020. We found that the majority of students who responded to the survey preferred in-person lectures and labs (Figure 1). We also found that, overall, instructors found their experiences with emergency remote teaching were less effective than teaching in person (Figure 2).

To support colleagues in navigating the path from emergency remote teaching toward more planned remote teaching in fall 2020, I also hosted several workshops. Three different workshops on teaching synchronously or remotely were hosted in the Department of Geological Sciences and one was hosted in the Center for Teaching and Learning (Table 1). These workshops were facilitated using interactive engagement techniques that were originally research-based instructional strategies developed for in-person instruction. In these workshops, I modeled how these strategies could be translated into synchronously taught class meetings. Participants also had the opportunity to engage in in-depth discussion of questions and/or practice different techniques using *Zoom* and/or *Google Drive* tools.

Table 1. Summary of Workshop Offerings

Date	Workshop Title (number of participants)	Host
June 10, 2020	Online/Remote GEOL Field Courses & Field Trips (7)	Dept. of Geological Sciences
June 11, 2020	Online/Remote GEOL Courses in General (13)	Dept. of Geological Sciences
Nov. 9, 2020	Zoom Options for Engaging Students (12)	Dept. of Geological Sciences
Jan. 6, 2021	Techniques to Facilitate Real-Time Active Learning in Remote Courses Using Zoom and Google (>58)	Center for Teaching and Learning

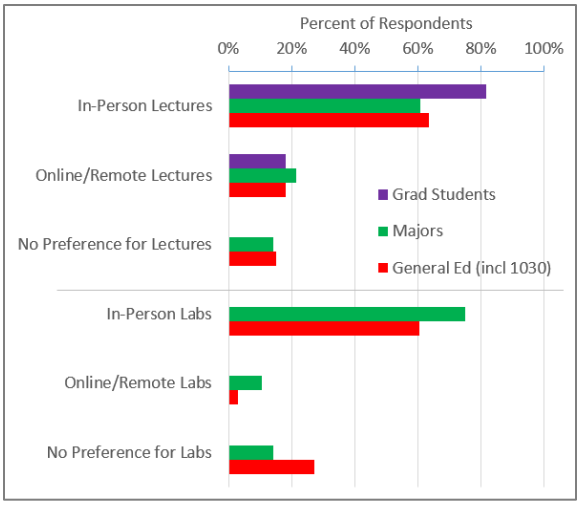

Figure 1. Student preferences for in-person versus online/remote instruction. (D. Budd)

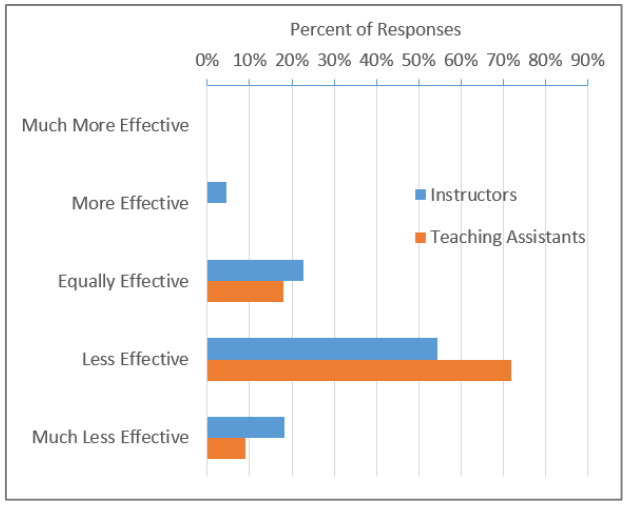

Figure 2. Instructor assessments of in-person versus online/remote instruction. (D. Budd)

Reflections

The COVID-19 pandemic forced many of us to rethink how we approach teaching while simultaneously forcing us to cope with a global health crisis that made our private and professional lives collide while we worked from home. Forced with the need to distance myself from students and others, I made a concerted effort to retain the types of interactive engagement strategies that I use when teaching students in usual in-person classes. To do this, I sought assistance from the Office of Information and Technology who helped me learn the ins and outs of *Zoom* features during the first weekend after courses went online/remote. At the same time, I was aware that sharing what I learned with my colleagues could help reduce their time trying to figure out the very same things and would be a way for me to help disseminate what I had learned from OIT and through my own experimentation with new instructional

tools and new instructional modality. Soon after the announcement with hard deadline to transition away from in-person teaching, different units on campus began emailing departments myriad resources to assist with the move into remote emergency teaching. At the time, I was too overwhelmed to read those emails (like others whom I learned about) and saved them in a folder. As soon as I got my head above water, I read the emails, thought it would be useful to archive them in an easily accessible way for everyone in the department, and subsequently created the in the GEOL-RTC. I know the GEOL-RTC and the resources in it, especially the how-to documents I created, were very well used during spring 2020. I am less sure how much use they got after that. Nevertheless, the GEOL-RTC was created to help our department get through the emergency phase of teaching remotely in spring 2020; so, even if it used less now, it served its purpose in the moment. The same is true about the surveys that were administered. Their primary purpose was to provide a reference point as instructional decisions and planning for fall GEOL courses came around the corner. Of the three primary objectives and their associated outcomes, the workshops are most well positioned to have a longer-term impact. Although beyond the scope of my ASSETT Faculty Fellows project, I do wonder to what extent what instructors who attended these workshops actually incorporated into their teaching and their course designs during the pandemic as well as after the pandemic. At the very least, I know that these workshops helped to build community in my department, provided safe and open fora to discuss questions about teaching, and certainly gave all of us wonderful opportunities to exchange ideas and share our experiences with one another. I am very thankful to have had the opportunity to be a part of the ASSETT Faculty Fellows program in 2020-2021. I am also grateful to my steadfast Department Chair for supporting the work involved in this project and to my amazing colleagues for making every day worth “coming to work” even during a pandemic when most of us are physically working from home.