“Effective assessment through a mix of in-person and online learning”

By: Clayton Byers

The transition to online and distance learning was a disruptive move for all educators. The manner in which we adapted our classroom to the virtual environment vastly differs between disciplines and subjects, and no two approaches are necessarily alike. Likewise, no universal approach exists for all courses. Nonetheless, best practices can and should be employed to create an effective classroom that promotes learning, discovery, and synthesis of the topics and material covered.

The method of delivering midterm and final exams has a significant difference in their efficacy between online and in-person meetings. Once we transitioned to distance learning, the remaining exams I provided my students (one midterm and one final in each of my two courses) were necessarily modified, and the timeframe/expectations of the students in completing the exams had to shift. Rather than a strict timeframe during the normally scheduled course meeting time, the core approach I took consisted of:

1. **Availability of the exam over a period of 24 hours.** It did not seem fair to expect students all across the world to log in at the same time to access the exam. This was doubly true due to my employment of asynchronous learning for the lectures. The exam would go live on Moodle at 8am on the morning of the exam, be available for access for 24 hours, then be removed.

2. **Extended time to complete the exam.** The regular 50 or 75 minutes for a midterm was doubled for all students, and the appropriate scaling was given to those who have academic accommodations. I felt this was necessary to help alleviate any added stress of their varied home situations, being out of a dedicated learning environment, potential technological disruptions, and other factors that could be out of their control.

3. **Open notes and open book.** There is no morally sound way to effectively police students in their access to outside materials while taking an exam from their home. The ability to access notes and their textbook was then allowed for exams.

These allowances were universally accepted by my students, with zero complaints and a significant number of them thanking me for the additional time, leeway, and access to notes. Overall, the resulting averages were 10% higher in ENGR 232 and 20% higher in ENGR 226. Whether or not this was a result of increased understanding or due to them having the ability to cross-check with similar problems is not known.

The aim of this CTL fellowship would be in aiding the development of a testing and quiz strategy that does a better job in assessing the mastery of a subject. This would borrow aspects of Kyle Evans’ CTL project in assessing subject mastery, where quizzes, homework assignments, and exams would be changed in their design to more appropriately account for this. Inclusion of

weekly quizzes, new to my courses, will allow a different means of providing students opportunities to demonstrate an understanding of the core concepts. The scope of the quizzes will allow the weekly homework assignments to be scaled back in length, which should allow fewer overall number of problems but enhanced depth of the questions. The overall goal is allowing the exams to still stand as an overall assessment of learning, but with more opportunities to demonstrate that knowledge throughout the course.

An additional goal will be to find an effective and fair way to give exams in an online format. With the likelihood of a hybrid or completely online approach, especially towards the latter half of the semester, an online midterm or final is something to be planned for. The CTL Fellows program will be able to help in my approach through the expertise and knowledge of the other fellows and our workshops.

The fall 2020 semester will have one engineering course that I can apply this idea to, allowing an initial “trial run” for my homework/quiz/test plan. The spring 2021 semester will then apply best practices, changes, and suggestions as a result of the CTL program and my fall experience. The long-term goal is to develop an effective assessment strategy for all of my courses that allows students to demonstrate an in-depth understanding of the core concepts outside the rigid constraints of a standard 50 minute exam period.