
PSII-B-23 Implementation of a design thinking approach to problem-based learning in an animal science capstone. Sushil Paudyal¹, Leslie Frenzel¹, Jonan Donaldson², Kathrin Dunlap¹, Jeffrey Wiegert¹, ¹Texas A&M University, Department of Animal Science, ²Texas A&M University, Center for Teaching Excellence

The objective is to present a strategy for attainment of capstone course objectives using design thinking. Problem based learning has long been incorporated into STEM, and yet inclusion of a formalized design thinking strategy is a novel approach for student-led cooperative learning. Relevancy of content and potential student impact upon the industry was established via the inclusion of stakeholders representing state live-stock commodity groups who, via Zoom, met with students to present an overview of challenges facing their respective industries. Students, working in teams, used these conversations to formulate complex problems as the basis of their design thinking process. Subsequent steps of convergent and divergent thinking and low and high-fidelity prototyping led to creation of prototype solutions, which were continuously revised based upon feedback received after deployment. Solutions were prepared for dissemination to varied audiences using multiple communication strategies. Students were required to develop a technical report, scientific poster, infographic, narrated video, and oral presentation. The necessary buy-in from instructors, guest lecturers, students, and stakeholders is significant and a potential challenge to be addressed from the onset of the course. Further, use of design thinking typically requires students to transition from traditional course delivery and assessments to real world situations in which they receive process guidance, but must develop problem solutions themselves. Students required both prompting and restraint to follow the design thinking process. Frequent and transparent communication are helpful in ameliorating student frustration. The student group dynamic was heavily influenced due to covid-19, as teams contained a mix of students physically attending classes and those working remotely. Preliminary feedback suggests that all students engaging remotely via a Zoom meeting helps to create a more equitable and productive working environment. In its first iteration, students are engaged in design thinking and achieving capstone course objectives on schedule.

Key words: capstone, design thinking, problem based learning

PSII-B-20 Benefits of a lecture teaching assistant in hiflex courses. Taylor Barnes¹, Jessica L. Leatherwood¹, Kathrin Dunlap¹, ¹Texas A&M University, Animal Science Department

The Covid-19 pandemic has required implantation of online education strategies, even for animal science courses, that are traditionally delivered face-to-face (F2F). As universities reopened many students were given the option of attending classes either F2F or remotely via live stream. This scenario, where some students are present in-person while others are present online simultaneously, is referred to as hiflex teaching. Face-to-face and online teaching strategies are established and literature contains pedagogical information, however hiflex teaching presents previously unencountered challenges. It can be difficult for instructors to maintain engagement with, essentially, two separate audiences of students. The objective was to address this issue by providing a graduate teaching assistant (TA) to large lecture courses, where traditionally TA positions were reserved only for lab courses. The hypothesis was that this would enable both audiences to receive appropriate focus. In this study, a TA attended the F2F lecture for an introductory equine science course (total students: $n = 75$; remote students: $n = \sim 55$), with the role of monitoring the simultaneous Zoom session with remote students. We found that questions from remote students increased when they had the ability to post them in real-time using the Zoom chat feature, as opposed waiting for a break in instruction in F2F situations. Having the TA present in the classroom enabled them to answer basic questions via Zoom, and to interact with the instructor should a question arise online that would benefit all students in the course. This allowed the instructor to effectively teach without taking up valuable class time alternating between programs on the computer and risking missing an online student question. This approach received positive feedback from the instructor and students alike. Additionally, it provided a novel teaching experience for a graduate TA. Similar strategies may be used to help to facilitate future success in hiflex courses.

Key words: hiflex teaching, undergraduate teaching, student engagement