STEM Course Enhancement: Use of a life-size equine model to teach equine safety skills.

PI: Jessica Bedore, Ph.D. jsb071@shsu.edu

Co-PI: Mark Anderson, Ph.D. mjanderson@shsu.edu

Involved STEM Courses:

      EQSC 2364.01 – 27 students

      EQSC 2396.01 – 15 students

      ANSC 1119 - 180 students

Project Narrative:

Executive summary. Safety is a key skill for all students interacting with horses in animal science courses. This skill is first introduced during ANSC 1119, EQSC 2364, and EQSC 2396 labs. Safety instruction begins with teaching students to approach the horse and correctly fit a halter to the horse's head. Students, particularly those with little to no large animal experience, struggle to overcome their nervousness around horses while also attempting to work with a new piece of equipment. This results in a dangerous situation for both the student and animal. This can be partially illustrated in that during our previous course offering, only 42% of students scored a 5 out 5 on this part of the practical. However, safety is so critical in our equine related courses and haltering a horse is a building block for all other coursework, that our goal is for 70% of students to achieve a 5 out 5. By acquiring a life size equine model, we can safely instruct these learning experiences by allowing us to teach haltering methods and other basic techniques on a model, prior to students transitioning to a live horse. We hope that repetitive practice will enable us to increase scores and safety amongst our students. The cost of a life size equine model is $1500, and will be used by more than 200 students per semester. **Rationale**. One of

the first skills we teach students in equine science courses is how to halter a horse safely. Halters are nylon or leather straps that are either tied or buckled into place on the horse's head in order to safely restrain a horse during normal human interactions, such as leading, grooming, or preparing to ride (Figure 1). There are many industry-accepted methods for placing the halter on the

Figure 1. A buckle (A) and rope (B) halter

horse; however, we teach our students a specific method that we feel is the safest. We describe this to our students verbally and then perform a demonstration using a live horse. Following this, we have students practice on the live horse until they feel comfortable. A practical exam occurs later in the semester.
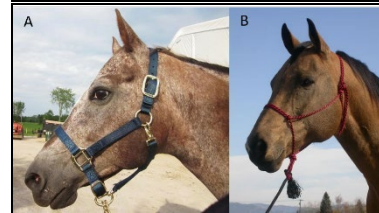
For this proposal, we intend to purchase a life-size equine model that can be used for practice sessions, enabling us to remove some of the difficulties commonly faced while teaching haltering. Namely, students are commonly multitasking during the learning process rather than focusing only on the new equipment. Many have a fear of or apprehension around horses, the horse may not stand perfectly still or raise and lower its head, and they are trying to remember where each of the seven straps on the halter are supposed to end up. This results in sensory overload and can cause students to focus on things other than the task at hand. Providing a life size dummy model will enable us to

temporarily remove concerns related to the live animal and students can focus on practicing the method of haltering independently without distraction. Once the student feels confident that they can safely halter the model horse, they can move on to applying the method to a live animal. It will also allow them to practice outside of class time, as they can have access to the model at any time during normal business hours.

Additionally, a number of other skills that can be practiced using the model, including but not limited to anatomy, flight zones, and leg bandaging. Typically, instruction of horse anatomy is done using images in a PowerPoint; however, a model would allow the students to walk around and physically touch each body part as we name them. While this can be done with live horses, instructors must constantly be cognizant of safety concerns when large groups of people are in close proximity to a horse distracting both instructor and students. Leg bandaging skills are similar to haltering in that is a skill that students must repetitively practice until mastered. Practice on a live animal often means the animal is moving about from time to time, and students, being near the legs and feet of the horse, are in a hazardous position and can become nervous.

The key educational principles enabled by use of the equine model are separating skills into disparate learning opportunities and repetitive recall, a proven concept for knowledge retention.

Materials and Methods. Students practice haltering during the first week of laboratory meetings in both EQSC 2364 (Equine Science) and EQSC 2396 (Safety and Handling). Students in Animal Science 1119 learn about equine safety during one laboratory experience of the semester. All students in EQSC 2364 and 2396 will practice haltering the equine model until deemed proficient, upon which time they will begin practicing with a live horse. The haltering practical exam occurs during the 4th week of class, by which time students need to demonstrate their skill level. Because correctly haltering a horse is a key skill for safety, our goal is to have 70% of students achieve a score of 5 out 5, 20% achieve at least a 4 out 5, and the remaining 10% to score at least a 3 out 5. Scores below a 3 are unacceptable, as safety is severely compromised. During our previous offering of the course, 42, 47, and 5% achieved a 5, 4, and 3 out of 5, respectively.

Expected Results and Dissemination Plan. We expect that student skill acquisition will improve and that scores on the practical exam will improve. We plan to disseminate this data at the National Association of Equine Affiliated Academics conference during the summer of 2021.

To be used for teaching equine safety labs in EQSC 2364, 2396, and ANSC 1119.