Life Size Learning Teaches Technical Skills to Students: Using Art, Anatomy, and Animals to Engage Students in Career Technical Education

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Introduction / Need for Innovation

Career and technical education (CTE) courses have the potential to integrate coursework, work-based learning experiences and hands-on experience which allow students to develop competencies, skills, and attitudes for success beyond high school (Witt, Ulmer, Burris, Brashears, & Burley, 2016). Finding new ways to engage students in meaningful, hands-on, technical lessons in the classroom is crucial to the continued success of a comprehensive agricultural education program. Career and Technical Education (CTE) courses, including agricultural education, have been considered a viable platform for teaching STEM concepts, because these courses deliver abstract concepts in an applied context, which is shown to increase student understanding (Smith, Rayfield, & McKim, 2015). In order for agricultural education teachers to adapt to an ever-changing educational environment, they must possess the skills necessary to integrate technology into their classrooms (Williams, Warner, Flowers, & Croom, 2014). This innovative project uses life size animal statues to incorporate academic content, tactile learning processes, and technological skillsets into the classroom. It also allows students to practice realistic industry supported skills in a creative way without leaving the classroom. This directly supports Priority Area Number Four of the 2011-2015 National Research Agenda which states that "meaningful learning is embedded in authentic environments or include real-world tasks or applications" (Doerfert, 2011, p.21).

How it Works / Methodology

This innovative idea involves the use of full size, unprimed gray fiberglass animal statues (i.e., cow and horse) purchased from Fiberstock Inc. Eighteen students in the Animal Anatomy and Physiology / Veterinary Medicine class brainstormed regarding which anatomical structures painted on the statues would provide the best learning opportunities for their class, the veterinary science career development event (CDE) team, and students in other animal science courses. Students assumed roles including designers, artists, anatomical experts, and videographers. Over a one-month period, the common cuts of meat, ruminant digestive system, respiratory and reproductive systems were painted on the cow. The horse had specific breed color patterns and the full skeletal system painted on one side. Students used the statues to review for their final exam by labeling the bones of the skeletal system. In addition, each student was assigned a final experiential learning project that included writing a technical skills lesson with a demonstration for their final exam. Each lesson was video-taped, edited and uploaded to the class Google folder to create a database of lessons. Exemplary lessons were showcased on various social media outlets such as the @slohsvetmed Instagram account, which is followed by several teachers and students highly interested in veterinary science.

The 2016-2020 National Research Agenda (Priority Area 2) states that "understanding how educational technologies in the classroom impact the teaching and learning process can help agricultural educators better contribute to growth and sustainability of agricultural systems in the future" (Roberts, Harder, & Brashears, 2016, p. 23). In order to help other educators and to inform community stakeholders about the strength of the CTE program, video clips were also shared on Twitter and Facebook. One of the goals of the 2011-2015 National Research Agenda (Priority Area 2) was to increase "the use of new technologies and social networking tools for communication to selected target audiences" (Doerfert, 2011, p.17).

Results to Date / Implications

This project has been followed closely by numerous agriculture teachers on the Ag Education Discussion Lab Facebook group and been projected to the over 6,000 members. It continues to create dialogue with the 80 individuals that "liked" the post and are commenting. In addition, it has been shared to the over 650 followers in the San Luis Obispo FFA Facebook account. Several schools have inquired about purchasing the statues for their own programs. Fifteen video lessons depicting skills and knowledge related to animal agriculture were written, created and shared via various educational social media accounts, including @slohsvetmed, which is followed by 705 students, teachers, and animal science industry professionals around the world. The addition of the statues appeared to have increased student numbers in the Spring introductory animal science courses that are perquisites for the capstone course "Animal Anatomy and Physiology / Veterinary Medicine." All introductory courses are currently full with waiting lists.

In addition, the statues have been used by the veterinary science Career Development Event team to record videos demonstrating the practicums for the National FFA Veterinary Science contest. Demonstrated practicums are also supportive of students seeking their assistant veterinary technician certifications. These videos are posted and available for teachers to use as teaching tools in a shared folder on the San Luis Obispo FFA website. Each video clip shared on social media accounts is hash tagged #CTE to provide awareness to industry professionals and to promote program awareness. Targeted hashtags such as #vetschool, #TeachAg, and #Anatomy have also connected students to individuals in educational institutions that advertise enrollment opportunities.

Future Plans

Future plans involve the continuation of enhancements to the statues. The muscles will be painted on the remaining side of the horse statue during April 2017 when the class resumes. The 2017-2018 schoolyear will include the addition of the pig, dog, and goat statues. Arrangements are underway to work with the company to continue to promote the use of these statues for agricultural education teaching tools. The San Luis Obispo FFA Chapter, in California will continue to develop a database of videos and lesson plans for use by teachers. Videos will continue to be posted on the class Instagram accounts as a resource to others.

Costs / Resources Needed

This innovative idea was funded via a mini-grant through the South Coast Region Agriculture, Water and Environmental Technology (AWET) sector for career and technical education. One stock horse primed and one beef cow primed were purchased from Fiberstock.com totaling $4,447.00. This included shipping, crating, and paint supplies. Yarn was purchased from a local fabric store to create the tails on both animals at a cost of $20.

References

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