TEACHING: UNDERGRADUATE AND GRADUATE EDUCATION

0762 The effects of learning communities and pro-active advising on performance of first semester students.

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Learning communities in higher education are not new, but they have received increased attention as universities look to enrich student learning. The objective of this study was to determine if students are more engaged and perform better academically when in an environment designed to foster stronger relationships with faculty advisors, course instructors, and peer students. First semester pre-veterinary freshmen at Kansas State University with ACT scores ranging from 21 to 28 (n = 122) were assigned to one of four treatment groups: 1) pro-active advising, learning community, and advisor as instructor; 2) learning community only; 3) pro-active advising only; 4) no intervention beyond standard advising. Students who were pro-actively advised were requested to meet with their faculty advisors a minimum of five times. Learning community students were enrolled in four common courses (eight credit hours). Students were monitored for academic performance, attendance in courses and advisor meetings. Additionally, students were required to complete a survey at the end of their first semester. Pro-actively advised students had a greater (P = 0.01) first semester grade point average (GPA) than students who were not pro-actively advised. Participation in the learning community alone or in addition to pro-active advising did not affect first semester GPA. Students whose faculty advisor was also one of their classroom instructors had a greater first semester GPA (P = 0.05) than students with an advisor they did not have as a classroom instructor. Grades for the Principles of Animal Science course, enrollment n = 147, were greater for students in treatment groups 1, 2, and 3 compared to students without intervention. There were no differences in course attendance between treatment groups. Treatment group 1 reported attending more (P < 0.0001) advisor meetings than students in treatment group 3. Treatment group 2 reported attending a similar number of advisor meetings to students in treatment group 4. More friendships (P < 0.0001) among peers were reported among students in treatment group 1 than any of the other treatment groups. Engagement of students with faculty and their peers seems to be greater when students participated in both the learning community and pro-active advising compared to students who only engaged in one or none of these activities. Increased engagement in the classroom and academic advising may be the reason for improved academic performance.

Key Words: learning community, pro-active advising, student performance

0763 Changes in the perceptions of students involved in a traditional meat science course.

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Many students have an interest in their food, but the idea of participating in or observing the slaughter and fabrication processes concerns them. However, the effect of participating in slaughter and fabrication on the perceptions of students taking a meat science course is relatively unknown. The objective of this study was to evaluate changes in student perceptions concerning fabrication and slaughter practices after participating in a traditional meat science course and laboratory. Students were surveyed at the beginning and end of the meat science course at SHSU. Survey questions centered on students' perceptions of sanitation during slaughter and fabrication, U.S. slaughter practices, and the students' current and desired level of knowledge about food production. All questions were measured using a 15-cm line scale with the lowest numerical value representing the most negative perception and the greatest numerical value representing the most positive perception. Averages of the paired pre- and post-course surveys were analyzed using the TTest procedure in SAS. When asked how sanitary the processes of slaughter and fabrication were, the responses in the post-course survey were greater (P < 0.01) for both questions. Results of the post-course survey indicated that students believed they were significantly more knowledgeable about the meat products that they consume compared to before taking the course. However, no differences (P = 0.29) were detected in the overall level of knowledge that students desired to gain about their food products. After taking the course, students had a more positive (P < 0.01) outlook toward slaughter practices in the United States. When asked which in step of slaughter that beef cattle go from being an animal to a product, no differences (P = 0.52) were detected between the pre- and post-course surveys. These results indicate that involving students in slaughter and fabrication did not change students' interest in the meat industry or their perceptions on when an animal becomes a product. However, it improved their overall perceptions of the meat industry and their overall level of knowledge, leading us to the conclusion that participating in and observing slaughter and fabrication continues to be a valuable teaching instrument despite student concerns.

Key Words: meat science, fabrication, slaughter

0764 Student and evaluator perceptions of an oral equine "speed selling" exercise. J. S. McCann*, *Virginia Tech, Blacksburg.*

Evaluation skills taught in animal science curriculums often serve as foundation education for judging competitors that may be required to deliver oral reasons. The formality and structure of the oral reasons may be a deterrent to some students' enrollment. Thus, a class of 43 students in an equine conformation and biomechanics class were required to apply their knowledge in two oral "speed selling" exercises for a grade. Students were required to select an outstanding horse with photos and/or video and construct a maximum 90-sec presentation designed to sell the horse on its merits. A panel of evaluators familiar with oral reasons volunteered to score students on a scale range from 1 to 5 for eye contact, voice strength, confidence, terminology, and analysis depth. Students were required to present twice for the first exercise and had the option to present two or three times for the second exercise (top two scores recorded). Class average grade recorded for the first exercise was 41.6 ± 4.7 points, while an improvement was evident when compared to the average 46 ± 2.8 points for the second exercise. To prepare, 70% of the students searched through a minimum of four to 10 horses (Internet sales or farm sites) to find a suitable horse. Most students (81%) elected to practice their oral presentation more than three times, either alone or in front of others. Nervousness decreased from the first exercise (84% either agreed or strongly agreed they were nervous) to 56% on the second exercise. All but three students felt the 90-sec time frame was appropriate for the exercise, and 77% felt the exercise enhanced their verbal skills, a value similar to the 77% who felt they ultimately spoke more like a horseman. When asked if the exercise should be included in future classes, 86% responded positively. Among the volunteer evaluators, 67% were comfortable with scoring within three students. Most evaluators (83%) preferred a 60-sec review time with the student to explain the scores given and agreed the exercise was worth their time. Among the traits scored, evaluators indicated confidence was the trait most important in earning a higher score. Oral speed selling scores were attained for the entire class within a 45-min time frame, and the positive reception to the exercise from students and evaluators has ensured the future implementation of the exercise.

Key Words: equine, instruction, reasons

0765 Efficacy of *i*CEV incorporation into a general animal science undergraduate classroom. R. J. Rathmann* and R. A. Ritz, *Texas Tech University, Lubbock.*

The purpose of this study was to evaluate the effectiveness of utilizing online media technology (*i*CEV; CEV Multimedia, Ltd., Lubbock, TX) as opposed to a traditional textbook to enhance learning in a general animal science undergraduate course. *i*CEV is an online media library of over 40,000 edited minutes of content specific to courses taught in agriculture and especially disciplines in animal science. A customized playlist was created which was linked to the instructors' syllabus online. The playlist allowed students to easily identify and view the segments required by the instructor before attending lecture in the classroom. The instructor administered accountability quizzes at the beginning of the lecture period to ensure that students viewed the material. The objective was to efficiently enhance learning through visual exposure to industries and experts across disciplines in animal science to engage students at a deeper level. The instructor developed a 16-item instrument to survey students after completion of the course. A convenient sample of students (n = 37) were asked to indicate their level of agreement with each statement by using a four point Likert-type scale (strongly agree, agree, disagree, strongly disagree). Participation of subjects was voluntary and data was collected in confidentiality. Descriptive statistics were generated with SPSS (IBM SPSS, Chicago, IL; 20.0 software). Twenty percent of the respondents indicated they spent less than an hour weekly viewing *i*CEV, 52.5% spent one to 2 h, 25% spent two to 3 h, and 2.5% spent more than 3 h. Of the respondents, a total of 83.3% strongly agreed or agreed that viewing *i*CEV increased their interest in the animal science field of study and a total of 94.4% strongly agreed or agreed that viewing *i*CEV increased their awareness of career paths. Seventy-five percent of the respondents either strongly agreed or agreed that they preferred learning from online media compared to learning from a textbook. A total of 94.6% of the respondents indicated that they either strongly agreed or agreed that utilizing online media for course reference materials increased learning. Collectively, it would appear that incorporation of *i*CEV in replacement of a traditional textbook in an undergraduate general animal science course was preferred by students to stimulate the learning process.

Key Words: online multimedia, *i*CEV, teaching

0766 Impact of the male on meat production: A case scenario in swine. J. J. Parrish* and J. L. Susko-Parrish, *University of Wisconsin, Madison.*

To target global competencies in animal sciences, a case scenario exploring climate impacts on swine production was developed. Case scenarios differ from case studies in that the former are guided explorations around a topic, while the later are more open ended. The project had three major objectives: 1) development of technical skills related to understanding male physiology, semen collection, analyzing data, and processing semen for artificial insemination; 2) learning outcomes related to impact of climate on male reproduction, solutions to climate impact on boars, understanding how decisions related to boar management impact society differently in the United States and Philippines, relationship of theory to real world in male reproduction, and role of infrastructure in

livestock production; and 3) general goals of global awareness or competency, issues in global agriculture, critical thinking to solve real world problems, understand issues that would place the United States in a more favorable position to compete in global agriculture. The case scenario can be found at: http://www.ansci.wisc.edu/jjp1/pig_case/html/firstjob.html and involves a student graduating and being hired by a swine production facility in the Philippines as the boar stud manager. Student teams worked through interactive and Web-based scenarios to achieve the objectives. The case scenario replaced two lab periods in a general reproductive physiology course that is a core component of the animal science major. Several written documents (3), analysis of data (3), and class discussions were required of students. A survey was used to evaluate the project with the scoring system being on a 1-to-5 scale, with 1 being not successful, 3 being somewhat important, and 5 being very successful (n = 82), and data is presented as the mean ± sem. The attainments of six technical skills were individually evaluated, but overall the average was 4.08 ± 0.04. The six learning outcomes were also individually evaluated and were very high overall, with an average score of 4.43 ± 0.03. There were four general goals individually evaluated, but overall results were high, with an average score of 4.03 ± 0.06. A Wordle approach was used to examine the usage of words within an assignment to describe the role of the swine industry in the Philippines for a company newsletter. Students were able to demonstrate relationships between, meat, the male, meeting demand, a commercial setting and quality. Overall, the project succeeded in achieving the objectives and demonstrates how international content can be incorporated into core classes within animal sciences.

Key Words: boar, international, climate

0767 Incorporating writing-intensive assignments in an animal science production course.

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Writing skills are pivotal for effective communication and are not well-developed among a majority of college students, particularly students in the field of animal science. At a southwestern university, upper-level undergraduate animal science production classes are required to be writing-intensive. In an effort to improve writing skills and as a component of course writing requirements, weekly in-class writing assignments based on prompts related to the week's lecture material were integrated into a dual-listed feedyard management course. Assignments represented 25% of the student's grade and were evaluated using a rubric for individualized feedback. To assess effectiveness of this assignment, students completed a pre-test and post-test to gauge writing apprehension. An instrument was also completed at the end of the semester for student reflection. Total course enrollment was 40; seven graduate students and 27 undergraduate students completed all assessments. A paired t test was used to analyze writing apprehension; after completing writing assignments, students indicated they were better able to express ideas through writing (P < 0.05); were more confident in expressing ideas clearly through writing (P < 0.05); stated that writing helps them think more thoroughly through concepts (P = 0.06); and felt more confident in their ability to write (P < 0.05). The majority of students (56%) indicated the writing assignments helped them to better understand the course material; felt the writing assignments allowed them to be more comfortable with the material (53%); and thought the assignments were useful and relevant (63%). The reflection instrument also revealed that writing assignments helped students learn to organize their thoughts better (57%), and that the individualized feedback for each assignment was adequate to help students to make improvements in their writing approach (67%). Based on the feedback received, this assignment will be used again, but with more detail provided throughout class on the writing process.

Key Words: animal science, production course, writing

0768 Improved student achievement through gamification and the flipped classroom.

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Emerging teaching strategies for educating informational-age students include gamification and the flipped classroom. Use of game design elements in non-game contexts are thought to not only make the classroom more enjoyable for students, but also assist them in mastering knowledge. Game design elements can also potentially increase critical thinking skills based on gaming elements utilized. The flipped classroom as a pedagogy is defined as students viewing asynchronous lectures on their own and participating in learning activities during scheduled meeting times. For this experiment, students enrolled in an Introduction to Equine Science course were instructed in a flipped classroom learning environment and participated in weekly educational games over the course of a 16-wk semester. Students were administered the Cornell Critical Thinking Test (CCTT: Level X) on the first and last day of the semester. Students' exam scores and overall course grades were compared to the previous three course offerings taught in traditional lecture format. Finally, students were asked to evaluate their experiences based on a 5-point Likert scale: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). For CCTT, students' scores (n = 67) increased mean 50.5 ± 0.76 from the pretest to a 55.8 ± 0.78 for the post-test (P < 0.001). When given similar exams, students' scores increased a mean 5.6% ± 1.1 for Exam 1 (P < 0.001), a mean 4.8% ± 0.9 for Exam 2 (P < 0.01), and a mean 3.8% ± 1.1 for Exam 3 (P < 0.05) compared to the previous 3 yr (n = 166). Overall course grades improved 4.0% ± 1.1 (P < 0.05) compared to the previous three class grades. Students

(n = 55), when asked to evaluate their experience, ranked the "flipped classroom has been enjoyable" as mean 4.5 ± 0.09, "flipped classroom is an effective teaching strategy" as mean 4.25 ± 0.08, "I would prefer to watch lectures online and do learning activities in class" as 4.43 ± 0.12, "in-class activities are a wise use of class time" as 4.43 ± 0.08, "this course encourages independent, creative and critical thinking" as 4.45 ± 0.09, and "I would recommend this course to a friend" as 4.67 ± 0.07. Gamification was viewed as an excellent teaching tool, particularly as review before an exam. Overall, the flipped classroom as a teaching strategy led to greater student critical thinking, achievement, and satisfaction.

Key Words: flipped, gamification, critical thinking

0769 Impact of student engagement activities on student performance on a short assessment.

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Cooperative learning techniques such as Turn To Your Partner (TTYP) offer opportunities to engage an entire classroom while encouraging learners to think more deeply about a topic. A question is formulated to promote deeper understanding of a lecture concept. Students are challenged to think about the question multiple times—individually, with a partner, and during classroom discussion where individuals are randomly held accountable for thinking. To assess the value of this activity on achievement in a challenging senior-level animal science class, 47 students were enrolled in a blinded study comparing the number of TTYP activities in a class period (0, 1 or 2) with student performance on a short five-point quiz at the beginning of the following lecture period. The experiment was conducted twice during the semester, with each treatment (0, 1, or 2 TTYP) conducted during the first exam period (P1) and again during the second exam period (P2). Only scores from students that were in attendance during both experimental and assessment lectures were included in analysis (n = 35 to 42 students). Data were analyzed using the PROC MIXED of SAS, with the fixed effects of period and number of TTYP, and the random effect of student. There was a tendency for a TTYP × period interaction (P = 0.08) where during P1, 2 TTYP scores (3.47 ± 0.177) were greater (P = 0.004) than 0 TTYP scores (2.81 ± 0.183), and tended to be greater (P = 0.07) than 1 TTYP scores (3.05 ± 0.192). Scores between 0 TTYP and 1 TTYP did not differ (P = 0.30). However, during P2 there were no differences (P > 0.33) between scores for 0, 1, or 2 TTYP, (3.43 ± 0.187, 3.20 ± 0.191, and 3.38 ± 0.185, respectively). After the use of TTYP during P1, scores improved, possibly because material in this period is biochemistry-based and typically less interesting to students. However, by P2 the students may be more interested in the material and have a better understanding of expectations, such that TTYP number did not impact overall performance. This experiment suggests that utilizing simple techniques to engage learners during lecture may be beneficial to encourage participation early during the semester, as well as promote thinking during presentation of difficult material. Student evaluations at the end of the semester were overwhelmingly positive in response to both the TTYP exercises and the quiz assessments.

Key Words: student, cooperative learning, engagement

0770 The impact of implementing interactive exam review strategies on student satisfaction and exam scores.

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Interactive teaching increases students' satisfaction and performance in college courses. These strategies require time and effort from the instructor. Due to student personality differences, there is no guarantee that students are satisfied with the teaching methods of the instructor. The objective was to investigate the impacts and relationship between student personalities, the type of course review strategy on exam scores, and student satisfaction. The population consisted of 53 students enrolled in the spring 2013 Animal Reproduction and Breeding course at the University of Idaho. The Real Colors Personality Indicator (RCPI) was administered to assess and describe students' personality. For Exam 1, students were assigned randomly to one of the two review session methods: quiz bowl (QB) question-answer or lecture review (LR), with both methods facilitated by the course instructor. The groups were then switched for Exam 2. For the final exam, students chose the review method session or attended both. After attending review sessions, student satisfaction of the review type was measured using a researcher-created, (scale of 1 to 4). Data from the RCPI, satisfaction questionnaires, and exam scores were analyzed using the Statistical Package for the Social Sciences. The class was 80% animal science majors. Overall, students were more satisfied with the QB review method (M = 3.24, SD = 0.74; M = 3.52, 0.45) than the LR review method (M = 2.50, SD = 0.35; M = 2.64, 0.32) for both Exam 1 and 2, respectively. Data also revealed that students who attended the QB review session scored greater on Exam 1 (M = 79.5, SD = 13.6) than the group of students who attended LR (M = 71.6, SD = 13.0) or did not attended review session (M = 62.4, SD = 14.7). For the final exam, students attending both review methods had a greater score than those who did not attend any review sessions. When exam scores of the four personality groups were compared, students with a green personality scored the highest on all three exams. Green personalities tend to be logical intellectuals who are curious and irritated by drill and routine. It appears that interactive review sessions improve student information retention. It is recommended that college professors provide review sessions and perhaps incorporate interactive review strategies, like quiz bowl. By improving teaching methods, and awareness of student personality differences, improvements can be made in student's course performance and satisfaction.

Key Words: learning styles, review strategies, teaching

0771 Integrating teaching and extension: Swine production. H. M. Zaleski*, *University of Hawaii at Manoa, Honolulu.*

Swine Production is a senior capstone course in which students integrate concepts learned in courses such as nutrition, genetics and reproduction and apply them to practical swine production. Most animal science students at the University of Hawaii at Manoa are urban students interested in veterinary medicine, with little knowledge of or interest in swine production. The departmental learning objectives include applying principles to livestock production, but having students engage in learning this material is a challenge. The extension specialist teaching the course tried a new approach in fall 2013, integrating instruction and extension. Instead of traditional classroom instruction and written reports, teams of three students were sent out to work with cooperating farmers. Each team described their farm using a list of required information on general farm description, breeding program, feeding program, housing, waste management, health program, production management, and economics. The farms were carefully selected to represent different management approaches including varying use of local food waste and agricultural byproducts in the swine rations and different types of housing and waste management. The teams presented the results of farm visits and farmer interviews in class presentations and written reports, which were revised before being submitted in final form to both the instructor and the farmer. The course was designated as developing both oral and written communication skills. Course evaluations indicated that 78% of the students felt that the farm visits and interactions with the farmers were the most valuable part of the course, and 44% mentioned hands-on laboratories (artificial insemination and baby pig processing), while others mentioned constructive feedback, small class size, having to think, oral presentations, and writing. Student journals indicated a strong rapport with and a very positive view of the farmers and farm practices. The farmers changed some of their practices based on student recommendations, most notably adjusting feeding according to condition score. Student grades were equal to or better than in more traditional learning environments. The new structure had some challenges. Students were required to sign liability waivers and confidentiality agreements. Students had to use their own cars and to find times when all team members were available for farm visits. The relative contributions of the team members to the group reports were evaluated by all members of each team. Students indicated that the amount of work justified four rather than three credits for the course.

Key Words: swine production, undergraduate teaching, extension

0772 Teaching companion animal management: Perspective from a livestock nutritionist. J. L. Wahrmund*, *Texas A&M University–Commerce, Commerce.*

Many students enrolling in animal science programs aspire to attend veterinary school and find there are few courses in their course catalogs focused on their primary interest, companion animals. Institutions have recognized this demand, and some have created companion animal management courses to help satisfy students' wants and needs. However, few institutions employ animal science professors specializing in companion animals. At Texas A&M University–Commerce, there are two animal science professors, both of whom specialize in beef cattle. One was tasked with teaching companion animal management, and this abstract outlines the approach utilized to effectively develop and deliver this course. The course was taught online during the summer with an enrollment of 17. At the beginning of the course, students were asked to identify which species most interested them, other than dogs and cats, and which topics they were most eager to learn. Species interests included rabbits (n = 5), reptiles (n = 4), fish (n = 3), ferrets (n = 2), chinchillas (n = 1), and birds (n = 1), with one student indicating interest in all species. Topics of greatest interest included nutrition (n = 12), health (n = 11), anatomy (n = 4), and reproduction (n = 3). Other topics covered in addition to these included breeds, behavior, training, showing, geriatrics, business management, careers, and managing unwanted animals. All topics covered were presented with dogs and cats as the primary models. Other species were presented in specific lectures for that species and covered basics of nutrition, reproduction, health, and housing. The textbook *Companion Animals: Their Biology, Care, Health, and Management* by Campbell and Campbell was used as the primary guide for presentation of information. Other sources of information were obtained from the American Veterinary Medical Association, the American Kennel Club, and the Cat Fanciers' Association, to name a few. At the end of the course, students were asked to indicate their favorite and least favorite aspects of the course. Generally, students enjoyed learning about a wide variety of species and disliked that the course was offered during a short summer session online, which eliminated possibilities of hands-on learning. Student course evaluations were unanimously positive. Instructors teaching management courses outside their species of expertise can employ numerous resources. Allowing students to provide input regarding topics to be covered can help provide rewarding educational experiences for both students and the instructors.

Key Words: companion animals, teaching, undergraduate education

0773 A comparative veterinary course for pre-veterinary students. *A. P. Fidler*, University of Arkansas, Fayetteville.*

Students entering veterinary school are expected to adapt to a new learning environment and begin retaining volumes of information very quickly. These students arrive with learning strategies developed during their undergraduate studies, which may not prove adequate for the speed and volume of learning required in veterinary school, and some subject areas might be quite foreign depending on the students' academic background. Problems resulting from unfamiliar material being met with deficient learning strategies often become evident in first-year anatomy courses. To address this issue, a Comparative Veterinary Anatomy course has been developed at the University of Arkansas for junior and senior pre-veterinary students. The objectives of this course are to familiarize students with anatomical structures of domestic animals, as well as to develop critical learning strategies for success in future scientific careers, graduate programs, and professional school. The course utilizes didactic lectures, illustrative reference materials, and hands-on laboratory experiences with live animals, preserved specimens, and fresh cadavers. Course topics are reinforced by examinations requiring identification of anatomical structures in illustrations as well as on specimens. The course objectives, modes of instruction, and student evaluation are meant to closely resemble a first-year veterinary curriculum's anatomy course to prepare students to succeed in such a course. In the two semesters the course has been offered, it has reached maximum capacity at 20 students. A survey was administered following the conclusion of the first semester asking students to describe the most valuable learning experiences during and outside of class. Nineteen of 20 students responded (95.0%). Eighty percent (80.0%) of respondents indicated that laboratory time spent examining live, preserved, and fresh dead specimens was the most valuable learning experience during class time. Sixty percent (60.0%) of respondents indicated that reviewing and/or recreating illustrations from the textbook was the most valuable learning experience outside of class.

Key Words: veterinary, anatomy