

Teaching/Undergraduate and Graduate Education

478 “Pre-Veterinary Academy” course exposes and inspires.

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In the competitive environment of professional school admissions, and with the massive time, effort, and financial commitment of a professional school program, students benefit from experiences that either reinforce their decision to pursue a professional degree or cause them to change their career path. The “Pre-Veterinary Academy” course exposes students to a veterinary school-like learning experience and delivers a range of subject matter for students to evaluate their interest in and preparation for veterinary school. The course utilizes a condensed 9-d intersession period, providing a unique opportunity to present a large-volume, fast-paced curriculum. Having the full academic attention of the students allows for more intensive lectures, case studies, and hands-on opportunities that are less practical to achieve during a full semester course. The condensed schedule also allows for visiting veterinary college faculty to provide several lectures in a single day, giving the students a more realistic veterinary school-like learning environment. All 10 students enrolled in the course in January 2015 completed a survey following conclusion of the course. All 10 students were either planning on or considering attending veterinary school, with no significant change following completion of the course. All 10 students believed they had at least “some,” with 7 believing they had “most,” and 1 believing (s) he had “all” of the skills, knowledge, and dedication to be successful in veterinary school. All 10 students indicated at least some improvement in their ability to perform and analyze a clinical examination of a veterinary patient as well as their ability to understand and apply research and clinical evidence to a medical case following completion of the course. Seven of 10 students described at least some improvement in their ability to understand and analyze lecture material as well as their ability to work with classmates to achieve learning objectives. The “Pre-Veterinary Academy” course provides students a brief taste of a veterinary curriculum to inspire commitment to and confidence in their pre-veterinary education.

Key Words: veterinary, education, teaching

479 SafeAssign as a tool for student identification of potential plagiarism.

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As writing across the curriculum becomes more common in higher education, the need for instruction about plagiarism is growing. Several plagiarism detection technologies identify matching text in student writing and published work. These technologies have been used to assist instructors in detecting plagiarism and to deter students from committing plagiarism. However, they may also be useful as an instructional tool to assist students to self-identify potential areas of plagiarism in their writing and make appropriate revisions before submission. The hypotheses of this study were that student use of SafeAssign would decrease percent of matching text from first to final submission and improve student awareness of plagiarism. To test these hypotheses, students ($n = 20$) in an upper level, writing intensive Animal Science physiology course were required to submit their first submission of a 15-page literature review to SafeAssign and write a short reflective piece on how they would improve their writing for the final submission based on the results. Students then completed an anonymous online survey to gauge the perceived usefulness of the assignment. Final submissions were also analyzed by SafeAssign and compared with first submissions.

The percent of matching text identified by SafeAssign ranged from 0 to 22% in each submission and was not different between submissions (first: $8.1 \pm 1.5\%$, final: $7.5 \pm 1.6\%$, $P = 0.6$). However, much of the text flagged were false positives, including common phrases and citations. Of 5 papers with true plagiarism, 2 were appropriately revised for the final draft and had fewer incidences of plagiarism. Students reported that use of the program was helpful in identifying potential areas of plagiarism ($n = 69\%$) and increased understanding of what is considered plagiarism ($n = 54\%$). Due to inclusion of false positives, the report generated by SafeAssign must be carefully interpreted by both the instructor and student; however, the report provides an additional opportunity for dialog about plagiarism. Use of plagiarism detection programs may be beneficial when used formatively by students during the writing process when supported by other mechanisms of instruction.

Key Words: plagiarism, writing, animal science

480 Using animal sciences courses to teach general university learning goals.

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At many universities, there are broad learning goals expected of all undergraduates; including critical and creative thinking, information and scientific literacy, communication, quantitative reasoning, diversity; and depth, breadth and integration of learning. Department often align their learning goals as much as possible, to these goals. To gain an assessment of Animal Science student’s broad abilities, we conducted a survey in 2 semesters to gain a qualitative assessment of student learning related to these broad goals. The classes included Intro. Anim. Sci. (101); Comp. Anim. Nutrition (a university General Biology course open to all majors); AS 285, Rights and Welfare; AS 350, Anim. Reproduction and AS 464 Comp. Anim. Management, a university Capstone course (primarily AS majors with others). The approximately 200 students were more than 80% under 24 years of age, female, Caucasian, with an even distribution of grade levels. For learning information literacy, over 90% of students went to the Internet first to find information, 40 to 55% to textbooks, 20 to 30% to scientific journals, 50% to notes, and only 10% to experts. For information literacy, approximately 55 to 75% self-identified as being comfortable (C) or very comfortable (VC) on using Internet sites from general, university, government agencies, and companies. For scientific and quantitative literacy AS students reported 67, 78, 77, and 65% C and VC on finding and reporting quantitative data, comparing data from graphs and tables, making conclusions from data and preparing graphs and tables. For general communications, on average, AS students reported C and VC at 69, 78, 68 and 56% for communication using verbal conversations, essays, presentations and long papers, with an improvement from start to end of semester of 7, 5, 12 and 13%. For communication on specific AS topics; for writing, oral, using social media, engaging in discussion and explaining complex issues, they reported C and VC at an average of 73, 61, 57, 63 and 56%. Improvement in during the semester was 6, 6, 11, 7 and 17% (a 35% improvement in “explaining complex issues”). Animal science courses can be used effectively to teach broadly applicable skills as well as subject specific skills.

Key Words: teaching, undergraduate learning goals, animal science students

481 Perceptions and effectiveness of teaching methods and technology in animal sciences classes. John P. McNamara* and Martin Maquivar, *Washington State University, Pullman, WA.*

New learning styles and careers demand new teaching pedagogies and technologies. Lecture/test, videos, online materials (video, PowerPoints, text, web searches); group projects, and homework may be used to a variety of effects. Different students learn in different ways and a variety of teaching methodologies may lift all students, at the least give them a more diverse skillset. Animal sciences teachers must also adapt to learning styles and technologies, however we should understand their effectiveness. To assess the effectiveness of various teaching technologies, we conducted a survey of animal sciences students over the course of 2 semesters and different grade levels to gain a qualitative assessment of perceptions and effectiveness of methods and technologies on student learning. The classes included Intro. Anim. Sci. (101); Comp. Anim. Nutrition (a university General Biology course open to all majors); AS 285, Rights and Welfare; AS 350, Anim. Reproduction and AS 464 Comp. Anim. Management, a university Capstone course (primarily AS majors with others). The approximately 200 students were more than 80% under 24 years of age, female, Caucasian, with an even distribution of grade levels. The students reported that lectures (with or without slides) and videos, pictures, or other media were their preferred methods of learning at 67 and 50%. In fall semester the percentage choosing lectures as their preferred methodology increased from 60 to 77% and videos decreased from 52 to 42%. When asked about the use of various teaching methods or technology, overwhelmingly 87 to 89% of students responded that in class lectures had the most positive effect on learning, while technologies such as clickers, interactive software, “flipped classroom” (students do work outside class and discuss/work in class) all were fairly neutral to slightly positive (25 to 40% “no effect” and 36 to 53% positive or very positive). Using on line search engines were a positive and very positive for 75% of the students. At this stage it may be concluded that students are most familiar and comfortable with in class lectures and on line searches but other technologies and methods are at least positively affecting learning.

Key Words: teaching technology, student perceptions, undergraduate education

482 Closing the gap between society and university: Effect of teaching animal welfare and animal rights course to animal sciences students at Washington State University. Martin Maquivar*, Kristen Koenig, and John McNamara, *Washington State University, Pullman, WA.*

There is increased scrutiny and concern for the welfare of animals used in research, education, food production, and companionship. Animal sciences departments have an opportunity and responsibility to provide education and expertise regarding animal welfare. Our general University learning goals include critical and creative thinking, quantitative reasoning, scientific and information literacy, communication skills, global diversity and integration of learning. The overall objective of the present study was to assess the effect of animal welfare and animal rights course on university learning goals of critical, creative thinking and communication skills related to animal welfare issues. A survey was conducted at the beginning and at the end of the semester. A total of 61 students (84% female and primarily third year) voluntarily answered the survey (questions ranked in a 5-point Likert scale) to assess perceptions and effectiveness of the course to achieve these goals. The course included discussions, assigned readings, term papers and a team project where students prepared a topic related to animal welfare and presented it to community groups (seniors, elementary school students,

and high school students). At the end of the semester students agreed or strongly agreed that “this course increased their ability to define, analyze and solve problems” (90.2%, 55/61); “understand diverse philosophical viewpoints and cultural perspectives” (92%, 56/61); “evaluate arguments based on evidence” (88.5%, 54/61); “tailor messages to audiences” (90.2%, 55/61); “express concepts and beliefs in a coherent, concise and technically correct form” (98.3% 59/61) and “speak with comfort in front of groups” (95%, 58/61). Students felt this course improved and increased their ability to solve problems, engage in discussions with members of the society and also increased their ability to effectively learn.

Key Words: animal welfare, undergraduate education, teaching

483 The relationship between delivery and discovery skills and student performance in animal science courses. A. Ahmadzadeh*, J. M. Falk, D. T. Masser, and M. E. Doumit, *University of Idaho, Moscow, ID.*

Different courses require different types of skills by students. The objective was to investigate the relationship between 2 types of students’ personal skills and their performance as measured by course grade. The population consisted of 55 students in 2 animal science courses (Animal Reproduction and Animal Products) at the University of Idaho. A 20-question survey was used to assess an individual’s delivery skills (planning, attention to detail, implementing, and self-discipline) and discovery skills (questioning, observing, networking, and experimenting). Discovery and delivery types were measured (scale of 0 to 50) and based on the score, the skill scores for each type were categorized into 3 levels: high (H; 43–50), moderate (M, 33–42), or low (L; ≤ 32). Data were analyzed using ANOVA. The model tested the effects of skill level, course, and their interaction. There was no interaction between course type and skill level. There was a moderate association between delivery skills and exam scores ($r^2 = 0.4$, $P < 0.01$). However, overall delivery skill level influenced ($P < 0.01$) the total exams grades. Grades were 88.1 ± 3.1 , 79.5 ± 2.3 , and 71.5 ± 3.6 for H, M, and L delivery skill, respectively. Discovery skills and exam scores had little association ($r^2 = 0.1$, $P > 0.5$). Discovery skill level did not influence ($P > 0.2$) the total exam scores. Grades were 87.8 ± 5.1 , 78.6 ± 2.1 , and 82.1 ± 3.1 for H, M, and L discovery skills, respectively. Overall, when exam scores of delivery skills were compared, students with H delivery skill earned the highest grades, whereas discovery skills had little influence on exam scores in these 2 courses. Students with high levels of Delivery skills tend to excel at planning, attention to detail, executing, and self-discipline. If course content is structured for memorization and fact acquisition, then instructors are encouraged to help students develop delivery skills. If course content requires exploration and innovation, then instructors should encourage discovery skills (like questioning, networking and experimenting), and provide feedback on these skills using course grades and assignments.

Key Words: discovery and delivery skills, performance, undergraduates

484 Gender differences in species and career interests among students in first-year seminar courses. Cody L. Wright, Sara L. Mastellar, Michael G. Gonda*, and Andie B. Vsetecka, *South Dakota State University, Brookings, SD.*

Changing demographics of students in Animal Science programs have created some uncertainty as to whether traditional curricula adequately address the needs of such a diverse body of students. This study was

designed to identify gender differences in species and career interests among students in first-year seminar courses in both Animal Science (AS 109) and Veterinary and Biomedical Sciences (VET 199). Students were surveyed using an instrument that included demographic questions and a series of 4-point, Likert-type scales for each species and career interest. Eighty-seven students in AS 109 and 45 in VET 199 completed the survey. Animal Science majors comprised 98.5% of the survey respondents, 1.5% had not declared a major. Of the 132 respondents, 68.2% were female and 31.8% were male. The majority of respondents were freshmen (86.4%), 6.8% were sophomores, and 6.8% were upperclassmen. Half of the students (50.8%) either came from a small hobby farm or had no farm or ranch background. Gender differences were analyzed using a Pearson Chi-Square test. Males had greater ($P = 0.019$) interest in feedlot cattle, while females had greater interest in goats ($P < 0.001$), horses ($P < 0.001$), pets ($P < 0.001$), and zoo animals ($P = 0.021$). Interest in cow-calf, dairy, poultry, sheep, swine, and wildlife between genders were not different. Career fields related to agronomy and the feed industry were of more interest to males ($P = 0.021$ and $P = 0.016$, respectively). Females had greater interest in both hands-on and support careers related to horses ($P = 0.003$ and $P < 0.001$, respectively) and in working with zoo animals ($P = 0.020$). Veterinary medicine tended ($P = 0.059$) to be of greater interest to females than males. Interest in careers related to animal breeding, animal reproduction, banking, Extension, farming/ranching, food production, government, meats, teaching, or veterinary technician between genders were not different. These data suggest that more females than males may be pursuing degrees in animal science. Furthermore, females clearly have greater interest in some species that may not be commonly included in traditional animal science curricula.

Key Words: animal science, students, gender

485 Factors affecting first-year academic success in a large animal science program. Amanda L. Robinson*, Heather A. Jennings, Jodi A. Sterle, Cheryl L. Morris, Kenneth J. Stalder, David G. Acker, and Howard D. Tyler, *Iowa State University, Ames, IA.*

This study was designed to determine if student's background, interests or non-academic skills affect their grade point average (GPA) during their first year at a large 4-year Animal Science program. All new students ($n = 344$) entering the Department of Animal Science at Iowa State University in the fall of 2013 completed assessments (TalentSmart's Emotional Intelligence (4 categories)) of non-academic skills at the beginning of their first semester. Demographic surveys were used to collect additional data (sex, residency status, entry status (transfer/freshman), species interest, career goals, and home background). Student records were accessed to provide data on previous and current academic performance that included high school rank, ACT scores, first year ISU GPA, and retention data. All data were analyzed using general linear model methods (PROC GLM, SAS Version 9.3). Fixed effects included sex, residency status, entry status, species interest, career goals, and background as well as ACT and overall Emotional Intelligence (EI) scores. For ACT and Emotional Intelligence assessments, students were separated into group quartiles by their scores. Of the higher order fixed effects, only ACT scores significantly affected end-of-first-year GPA. There was no interaction between Emotional Intelligence quartile scores and ACT quartile scores on end-of-first-year GPA. For incoming students in the ISU animal science program, ACT scores are the best predictors of first year grade point average.

Key Words: student success, emotional intelligence, demographics

486 Integration of an immersive experience in public policy and governmental affairs into agricultural sciences PhD training programs. Catherine W. Ernst*¹, Lowell Randel², Mary Malaspina³, Kaitlyn R. Perry¹, Deborah Velez-Irizarry¹, Camille Scott¹, and Ronald O. Bates¹, ¹*Michigan State University, East Lansing, MI*, ²*The Randel Group LLC, Washington, DC*, ³*Michigan State University, Washington, DC.*

With the increasing dependency on extramural funding to define the direction of animal sciences research, changes in policy at the federal level heavily influence the discoveries that will improve animal production. Yet few scientists are familiar with this process. Internship opportunities in governmental affairs or science policy are usually summer or full-year programs, and are typically available to advanced graduate students or post-doctoral scientists. Few opportunities exist for students early in their graduate program to explore governmental agencies or interact with policymakers. To address this limitation, we designed an immersive experience for PhD students supported by a USDA NIFA National Needs Fellowship Grant. Three students spent 4 weeks in Washington, DC in June 2014. Students were housed in a local university dormitory, using week 1 to acclimate to the area including familiarization with local transportation systems and locating destinations for subsequent weeks' activities. Weeks 2 to 4 were set up on a rotational basis with each student individually pursuing a different weekly activity. Students spent 1 week on Capitol Hill in the office of a US Congressman (a different congressional office for each student). They also spent 1 week visiting various USDA agencies (a different agency each day). For the third week, students shadowed a professional in either an agriculture-related non-governmental organization or a governmental agency, selected to fit with their individual interests. Through these experiences, students interacted with scientists in federal agencies involved with research and/or policy development, and scientists in trade or commodity organizations, as well as attended congressional hearings, briefings and other meetings on agriculture-related topics. This opportunity not only reinforced the interconnectedness of science, industry, and policy, but also exposed students to many unique scientific careers. This immersive experience in public policy, and its impact on the agricultural industry, greatly influenced the students' professional development.

Key Words: science policy, graduate education

487 Changes in emotional intelligence scores following a peer mentor experience. Amanda L. Robinson*, Heather A. Jennings, Jodi A. Sterle, Cheryl L. Morris, and Howard D. Tyler, *Iowa State University.*

This study was designed to determine if participating in a full-year peer mentor experience affects their emotional intelligence (EI) scores. Students selected to the peer mentor program for the Department of Animal Science at Iowa State University ($n = 34$) completed TalentSmart's Emotional Intelligence assessment before starting the program (January, 2014) and then completed the EI reassessment after completing the program (December, 2014). All data were analyzed using paired t -tests (PROC TTEST, SAS Version 9.3) to determine potential differences between each student's beginning and ending EI scores (4 distinct categories and 3 composite categories with possible scores ranging from 50 to 100). Scores for self-awareness, self-management, social awareness, and relationship management all significantly increased for peer mentors. The associated composite categories of personal management and social management also were significantly increased, as was the

composite for overall EI. Students that were new to the peer mentor program and started with initial overall EI scores that were below the group average score experienced the largest increase in all scores, with over a 14-point increase in self-awareness scores and over a 12-point increase in social awareness scores. Students showed improvements in

all aspects of their EI as a result of completing the peer mentor program in the animal science program at ISU.

Key Words: peer mentor, emotional intelligence