

Student-Led Social Science Research in an Introduction to Animal Science Curriculum

Dr. Blake C. Colclasure

Assistant Professor of Environmental Science
Doane University
1014 Boswell Ave., Crete, NE 68333
(402) 826-6728
blake.colclasure@doane.edu

Lauren Denofrio-Corrales

Associate Dean, Science
Heartland Community College
1500 West Raab Road, Normal, IL 61761
(309) 268-8639
lauren.denofrio@heartland.edu

Introduction

Public interest toward agricultural systems in the United States has grown, marked by food-related concerns that have achieved wide-spread attention on online and social media networks (Yadavalli & Keithly, 2014). Increased attention toward animal production systems has led the public to question the merits of many conventional animal production practices regarding food safety (Taylor, Klaiber, & Kuchler, 2016), the environment (Hartmann & Siegrist, 2017), the use of technology (Mather, Vikan, & Knight, 2016), and animal welfare (Cornish, Raubenheimer, & McGreevy, 2016). Consumer demand has ultimately shifted some aspects of the industry and will likely continue to do so. According to the National Research Agenda for the American Association of Agricultural Education (Enns, Martin, & Spielmaker, 2016), this phenomenon “require(s) agricultural professionals to become more flexible in their research, outreach, and teaching in order to more effectively communicate with the public” (p.14). Current issues in the animal sciences are a critical topic of discussion in many introductory animal sciences courses at both secondary and post-secondary levels. Students enrolled in introductory animal science courses, especially at the post-secondary level, will likely seek careers in the agricultural industry. Therefore, it is important that students not only understand current issues and public perceptions of the animal industry, but also gain an appreciation for social science research in agriculture, which often is overlooked behind the bench sciences (Martin, 2016). As teachers grounded by the constructivist approach to teaching and learning, we believe that students should explore critical topics at a deeper level through inquiry and self-discovery. During a post-secondary introduction to animal science course, we designed and implemented a unit that embedded student-led social science research on consumer perceptions toward current issues in the animal sciences. The student learning objectives for this unit were to: (a) develop and implement a mixed-method study to determine class perception toward one public issue in animal science; (b) create a laboratory report that addresses findings from the study; and (c) reflect on the basic components of social science research and the value of social science research in the animal sciences.

How it Worked

The unit was integrated in the course Introduction to Animal Sciences at Heartland Community College. The course was a 16-week course and included two, one-hour lectures and one, two-hour lab each week. The issues in animal science unit was taught during the second week of class and included two lectures and one lab. During the first lecture students were broadly introduced to current issues in the animal sciences. In the second lecture, students learned how to conduct qualitative and quantitative research in the social sciences. Students learned how to make a simple survey instrument to measure perceptions toward an issue. The basics of scale construction and Likert-type data were discussed (Shavelson, 1996). Lastly, qualitative research was discussed and students learned how to create a semi-structured interview guide for a one-on-one interview (Yin, 2016). During the lab for the unit, students were able to apply what they learned through student-led social science research. The first component of the lab required students to: (a) select one current issue in animal science, (b) construct a six item survey, using a Likert-type scale, that measured perceptions toward the issue, and (c) construct a semi-structured interview guide that focused on perceptions toward the issue. After students completed each of

these components, they were required to show the instructor their survey and interview guide, and to obtain the instructor's signature of approval to conduct their research. After approval was given, students delivered their survey to the rest of the class and recorded each participant's responses. Students followed up with qualitative research by selecting one individual to conduct a 10-minute, one-on-one interview with using their semi-structured interview guide. Most students were able to design their research instruments and to collect all their data within the two-hour lab. Students were given one week to complete their lab report. The lab report required students to display their quantitative responses, including the class average toward their construct. Furthermore, students were required to discuss results from their qualitative research, including displaying one direct quote from their interview. Lastly, students were required to summarize their overall findings of the class's perception toward the issue. Students concluded with a written reflection about their research experience. A rubric was used to evaluate lab reports.

Results/Implications

Students selected a diverse array of animal science issues. Topics ranged from using trap-neuter-release, for the control of feral cat populations, to greyhound racing. Other topics included the use of farrowing crates in swine production, the use of growth hormones in cattle production, the environmental impact of dairy cattle production, and the use of cages in the egg-layer industry. Students' lab reports were overall very well written, displaying *basic* understanding of how to design and conduct social science research in the context of the animal sciences. Students reported a better understanding of how public perception can be measured. Students also discussed how our class perceived current issues. As instructors, learning about the class's perception toward current issues was very interesting and was useful during future class discussions. As could be expected in an animal science course, most students appeared to be pro conventional agriculture. However, from several quotes provided in lab reports, some students had strong feelings toward animal welfare. Lastly, it is believed that this unit created a positive classroom environment by openly discussing varying viewpoints toward contentious issues in the animal sciences.

Future Plans

We believe that this unit, and especially the lab, had a lasting impression on students. The promotion of social science research is an important endeavor to the future of our discipline. We plan to share components of this unit with other institutions and school-based agricultural education programs teaching animal sciences. Furthermore, similar social-science-based labs could be designed for other agriculture courses, such as introduction to crop science. Social science labs that are integrated in the core agriculture sciences will bring more attention to the discipline.

Resources Needed

Perhaps the most limiting resource to implement this unit in an introduction to animal science curriculum is time. Many instructors are already stretched thin with the amount of material they need to cover in an introductory course. However, we believe this one-week unit is worthwhile. Individuals who study agricultural-based social sciences are a critical resource for instructors who may not know how to integrate social science research into their curricula. Forming these networks could be a win-win for all stakeholders, and could lead to future collaborations.

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