

Leveraging expertise in animal welfare to create educational equity

JM Siegford^{*†}, AJ Zanella[‡], T Bernardo[§], CR Heleski[†], CL Wickens[†], K Laughlin[#] and R Malinowski[§]

[†] Department of Animal Science, 1290 Anthony Hall, Michigan State University, East Lansing, MI 48824, USA

[‡] Department of Production Animal Clinical Sciences, Norwegian School of Veterinary Sciences, PO Box 8146, Oslo 0033, Norway

[§] Information Technology Center, College of Veterinary Medicine, Michigan State University, East Lansing, MI 48824, USA

[#] Humane Farm Animal Care, PO Box 727, Herndon, VA 20172, USA

* Contact for correspondence and requests for reprints: siegford@msu.edu

Abstract

Globally, veterinarians and professionals in animal-related industries are faced with growing public concern for the welfare of animals, particularly those in production. To prepare professionals, courses in animal welfare should be created to provide consistent education on a global scale in an efficient and cost-effective manner. However, a creative approach to welfare education is needed to reduce the disparity between supply and demand for instruction in animal welfare. Michigan State University (MSU) is piloting a graduate-level, online interactive course in animal welfare assessment to provide students with high-quality science-based education from renowned international animal welfare experts at numerous institutions. Innovative use of technology enables students to interact with material, each other and instructors. Students actively apply their accumulated skills to hypothetical scenarios, enhancing learning effectiveness. Student performance and opinion were examined to determine whether the course meets the stated objectives. Twenty-three students from four institutions enrolled in the pilot course. In the first month, the majority of students found the online course easy to use and material appropriate for a graduate-level course. The students agreed that scenarios helped them integrate lecture material. The MSU course will serve as a model for collaboration in content assembly and course delivery, using technology to leverage global expertise to create educational equity.

Keywords: animal welfare, education, graduate, online, students, veterinary

Introduction

Globally, veterinarians and professionals in animal-related industries are faced with growing public concern for the welfare of animals. In the United States more Americans have become concerned with the welfare of animals and support standards and legislation to protect animals (Fraser *et al* 2001; Gallup Organization 2003). Restaurants and retailers are addressing concerns by pushing producers to provide them with welfare-friendly products for customers (Arnot 2005). Additionally, animal-related industries including restaurants, producers and research groups, remain under pressure from animal rights activists (Smith 2005a). As a result, governments, industries, and trade organisations are developing welfare assurance policies to mandate welfare standards, particularly regarding the treatment of animals in production (Heleski *et al* 2003). The International Organisation for Animal Health (OIE), with a mandate from the World Trade Organisation, is creating international welfare standards on transport, slaughter, husbandry and management of production animals (OIE

2005; Smith 2005b). Audits, however, must be performed by knowledgeable professionals to be credible (Gallup Organization 2003; Rauch & Sharp 2005), and a shortage of trained professionals may cause consumers to lose confidence in welfare standards if they are not properly implemented and monitored.

Problems facing implementation of animal welfare

Increased demand for welfare standards and a shortage of trained personnel create a growing need for educated authorities to guide the public in their decision-making processes. Therefore, the OIE recommends teaching animal welfare as a distinct subject, using a problem-based approach (Estol 2004; Schneider 2004), particularly to veterinary students who are respected as authority figures by the general public. Despite the growing number of academic institutions that are developing research and teaching programs in animal welfare (Siegfried *et al* 2005) there is still a shortage of suitable instructors at many

locations, and veterinarians and animal scientists and professionals are not receiving education or training in animal welfare or welfare assessment (Siegford *et al* 2005).

Online education works for animal welfare

To teach students about the scientific research and societal concerns surrounding animal welfare, a multidisciplinary approach is needed. Solid, well-rounded animal welfare education must encompass a myriad of different scientific disciplines in addition to the economic and social issues attached to use of animals by humans and the role of animals in society. However, qualified instructors in any aspect of animal welfare are scarce and a collection of instructors for such multidisciplinary animal welfare education can be found at even fewer individual institutions. By placing instructional materials for animal welfare online, content from geographically dispersed instructors can be assembled as a collaborative effort, creating a multidisciplinary resource. Additionally, students who would most benefit from or desire education in animal welfare are often not located near existing resources. Online opportunities, however, would allow students from various locations to participate, removing barriers that prevent them from learning about animal welfare at their home institutions.

Objectives

Michigan State University (MSU) is piloting a graduate-level, online interactive course in animal welfare assessment to overcome the scarcity of instructors while educating students in various countries. This course will demonstrate that online educational materials in animal welfare can provide consistent education on a global scale in an efficient and cost-effective manner.

Materials and methods

Course development

Students learn to assess animal welfare from a scientific perspective using material created with a problem-based pedagogy. Lectures and welfare assessment scenarios were prepared using Macromedia® Breeze™ software to facilitate addition of audio, video, animation, questions, and surveys into an interactive presentation. The final presentations are viewable with free Macromedia® Flash Player™. Students access material, including discussions, quizzes, and grades, through the course management system at MSU, which tracks student activity and responses. Hand-graded assignments require students to demonstrate understanding of the complex interaction between scientific and social realms. Discussions with peers and course instructors provide feedback and assessment of student understanding of each topic.

International experts created lecture material on topics including: defining welfare; behavioural, physiological, health and production measures related to welfare, neurobiology of animal welfare, pain and suffering, human-animal interactions, animal ethics and law, economics of welfare, and standards and assessments. Students actively apply information from lectures to assess the welfare of animals in

hypothetical assessment scenarios. These scenarios depict animals in various situations, eg livestock species in production, companion animals, laboratory animals, and exotic species in captivity. Information, such as behaviour, physiology, husbandry, nutrition, veterinary care, housing, and stockmanship pertinent to the welfare of the animals in the scenarios, is presented to the students. Students must rate the animals' welfare in each area and for the overall scenario. Students provide a reasoned argument and their confidence in their ranking. Students compare their assessment to a standardised answer key generated by expert animal welfare scientists.

Students

Animal science graduate students, veterinary students, and upper level undergraduates were recruited through personal contacts and presentations at annual professional meetings. Twenty-three students enrolled in the pilot online animal welfare assessment course (13 MS, 2 PhD, 7 veterinary, and 1 undergraduate) from MSU (11), Purdue University (1), University of Wisconsin (9) and Washington State University (2).

Course assessment

Student performance and opinion were assessed on a voluntary basis using multiple surveys and scenario assessments to examine impact of the course on knowledge of and attitudes toward welfare, assessment skills, and opinions on content and technology. Responses from the first knowledge and content and delivery surveys are presented in descriptive form. Assessment tools and protocols were approved by the MSU University Committee on Research involving Human Subjects.

Results

Answers on the introductory knowledge assessment ($n = 22$) showed 95% of students entering the course understood the difference between 'animal rights' and 'animal welfare' and 86% could correctly define the three approaches to assessing welfare (biological functional, feelings-based, and animal's nature-based). Responses from the first content and technology survey ($n = 16$) indicate that the majority of students found the online course easy to use and level and amount of content and work required appropriate (Table 1). Assessment scenarios appear to be effective teaching tools as 75% of respondents agreed that information in scenarios allowed them to assess the welfare of the animals and 81% of respondents agreed scenarios helped them integrate lecture material (Table 1). However, 38% of students did not feel that the scenario quizzes were easy to use due to inability to quiz from within the scenario directly.

Conclusions

Through this online course, students receive high quality science-based education from renowned international animal welfare experts at numerous institutions, which would not be otherwise possible. Innovative use of technology and media enables students to interact with material, each other and instructors. Students in the course found the

Table 1 Student responses to the first content and delivery survey in the online course.

Question	Student Responses (n = 16)				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
<i>Content</i>					
Material in this unit was appropriate for a graduate level course.	6	10	0	0	0
Amount of lecture material was adequate for each topic.	3	9	3	1	0
Required readings added substantially to my understanding.	4	7	3	2	0
Amount of reading per topic was appropriate for a graduate course.	2	7	6	1	0
The assignments in this unit helped me learn the material.	2	10	3	1	0
Time and effort required for assignments in this unit were reasonable.	4	7	4	1	0
The information provided in the scenarios in this unit allowed me to accurately assess the welfare of the animals.	2	10	2	2	0
The scenarios encouraged me to integrate course material and use critical thinking to assess animal welfare.	8	5	2	1	0
<i>Delivery</i>					
Material in this unit was arranged logically and was easily accessible.	3	11	2	0	0
Extra information in lectures and scenarios was easy to locate.	4	10	2	0	0
The scenario assessment quizzes have been easy to use.	1	9	3	3	0
I have been able to contact instructors when needed.	6	6	4	0	0

effort and content appropriate for a graduate level course and scenarios were found useful for teaching students to assess animal welfare. The MSU course will serve as a model for collaboration in content assembly and course delivery, using technology to leverage global expertise to create educational equity.

Animal welfare implications

Education in animal welfare assessment requires a multidisciplinary approach to address issues important to the public. A creative online approach can reduce the disparity between supply and demand for animal welfare education. The collaborative concept used in the current course can be expanded upon by creating complementary courses and creating materials and certification programs for training professionals in the field. Future directions for online materials in animal welfare might include: training tools for professionals, licensing the course to other universities, developing similar materials for undergraduate students and youth organisations, and developing in-depth modules on specific topics or species.

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