Teaching veterinary obstetrics using three-dimensional animation technology

J. Scherzer, M.F. Buchanan, J.N. Moore, S.L. White
College of Veterinary Medicine, University of Georgia, Athens, GA, USA

Historically, the teaching of veterinary obstetrics has been limited to descriptions of birth and dystocia through the use of photographs, text, and two-dimensional graphical presentations.

We hypothesize that the use of three-dimensional, interactive, digital animations will help students visualize, and therefore better comprehend the complex processes during both normal birth and dystocia. The Veterinary Obstetrics Project is developing both animations and interactive QuickTime VRs for use in instruction. The animations demonstrate normal birth, as well as dystocias and their appropriate treatments. The QuickTime VRs allow the students to interact with the three-dimensional model and examine the cow and calf from all angles.

In this two-year study, second-year veterinary students were taught using traditional materials in 2007 (n=62), and with the three-dimensional materials in 2008 (n=60). In addition to multiple-choice questions (maximum score of 80 points), the final examination in both years included essay questions designed to assess students’ comprehension of normal and abnormal presentations of the calf (maximum score of 15 points). Data were analyzed with the Mann-Whitney U test using Minitab statistical software.

Student scores for the multiple-choice questions were not different between years (medians 75 in 2007 and 74 in 2008). In contrast, student scores for the essay questions were significantly different between years (P = 0.001).

The results of this study indicate that the incorporation of three-dimensional animations of normal parturition and dystocia into the course enhanced students’ understanding of these processes.

Keywords: Three-dimensional animation technology, veterinary obstetrics, teaching.