

# Development of the iVetSchool Application to Supplement Veterinary Medical Students' Food Animal Education Through Problem Based Learning

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## Educational Need

Protection of America's food supply relies on competent, well-educated veterinarians. Unfortunately, there is an ongoing critical shortage of veterinary medical students preparing to become food animal veterinarians. Furthermore, the background of veterinary students has changed dramatically over the years. Students with significant food animal experience are now in a small minority. Concurrently, the preparation of food animal veterinarians has become more challenging, in part because the types and numbers of food animal cases that present to teaching institutions are decreasing. Assessment of clinical cases is a principal tenet of veterinary education.



## Goals

- Increase interest in becoming Food Animal veterinarians
- Improve fundamental Food Animal knowledge
- Improve critical thinking skills
- Improve technical skills
- Utilize technology students already use and understand – the iPod

## Project Outline

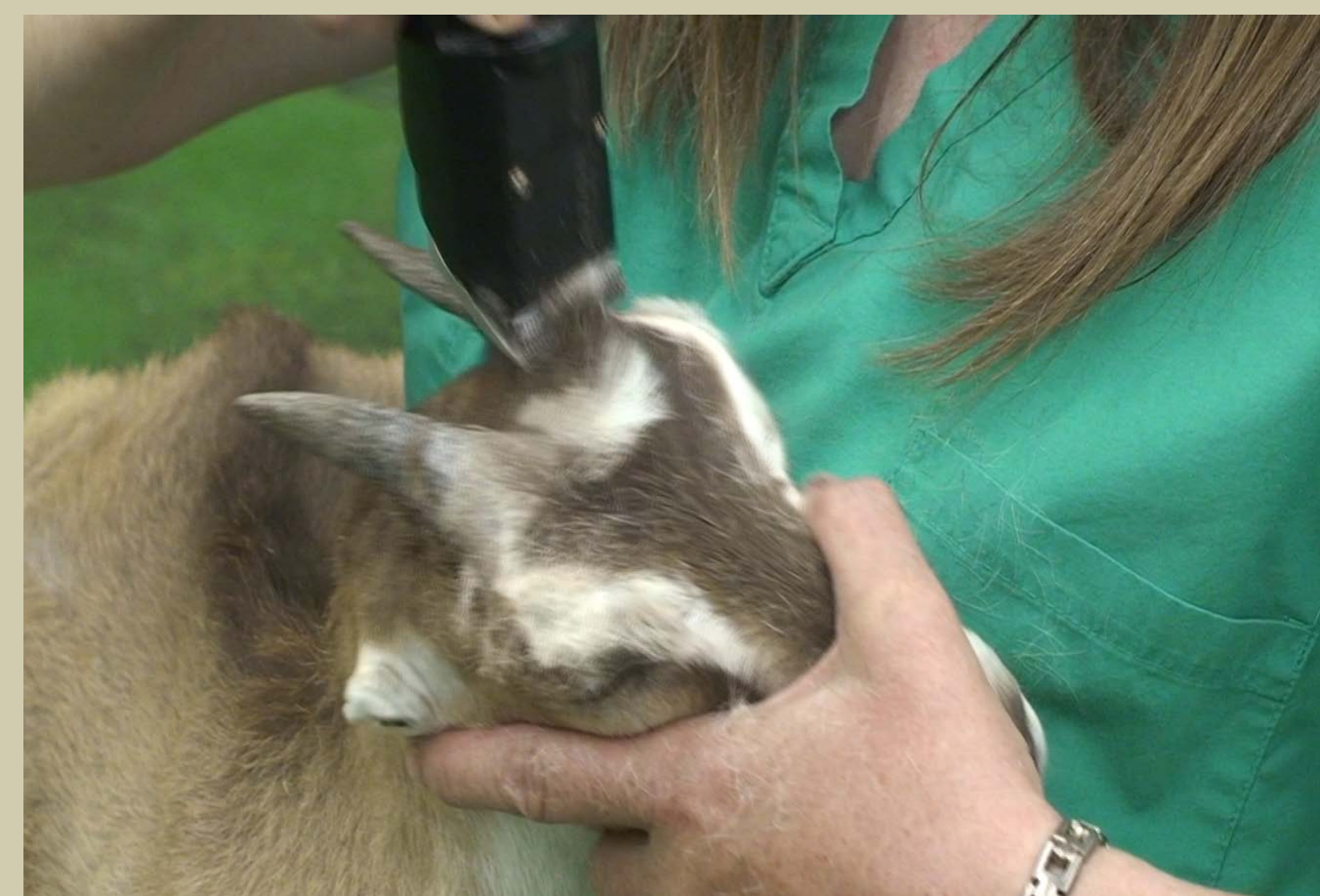
- Developed 19 food animal case studies including relevant media (veterinary faculty known for outstanding teaching)
- Measured control group
- Developed "wire frame" app to determine pedagogical flow of case studies
- App was developed once pedagogical flow was determined
- Populate App with developed case studies and relevant technical procedures using a Web based "loader"
- Pre-test treatment group
- Distribute iPod touches
- Implement iPod based case studies into sophomore year curriculum
- Post-test treatment group

## Status

- Currently in Beta phase
- Upload Web site – will be able to add new cases
- Continue to gather media and edit cases
- Ready for Fall 2012 semester
- iPods for students at all three CVM sites
- HSRT pre-test in Fall, post-test in Spring

## Cases

1. Coliform Mastitis
2. Displaced Abomasum
3. Lameness
4. Respiratory Pneumonia
5. Reproductive Efficiency
6. Inappropriate Drug Use
7. Hardware Disease
8. Uterine Prolapse
9. Pink Eye Outbreak
10. Johnes Disease
11. Yew Toxicosis
12. Neonatal Diarrhea
13. Bloat
14. Production Medicine
15. Edema
16. Urolithiasis
17. Ketosis
18. Parasitism (Small Ruminant)
19. Reportable Diseases



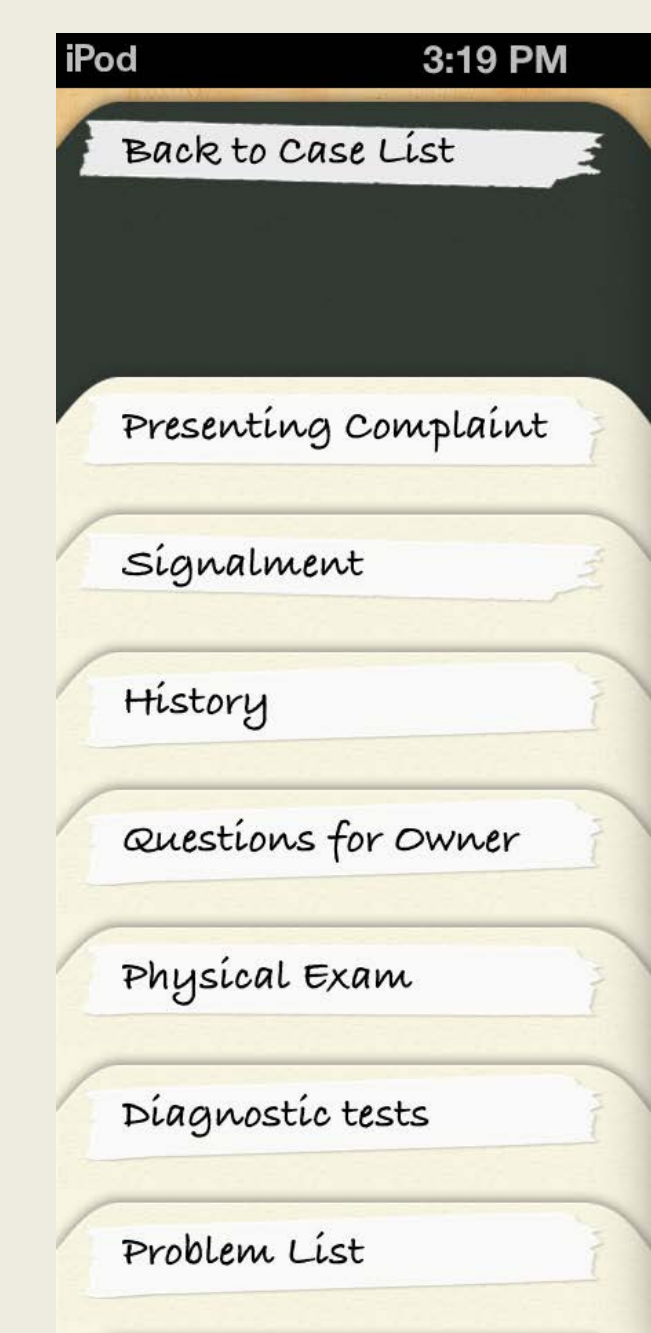
## Videos

1. Physical Examination of Cattle and Small Ruminants
2. Restraint
3. Abdominal Wall Anesthesia in Cattle
4. Anesthesia of the Distal Limb via Vascular (IV) Infusion in Cattle
5. Anesthesia of the Horn (Cornual Nerve Block)
6. Nerve Blocks (including Paravertebral and Epidural)
7. Cornuectomy in Cattle
8. Repair of Hernias and Umbilical Masses
9. Rumenotomy
10. Creation of a Temporary Rumen Fistula
11. Common Surgical Techniques for Treating Left Displaced Abomasum
12. Treating Right Displaced Abomasum
13. Surgical Technique for Treating Abomasal Volvulus (RTA)
14. Calf Delivery including Cesarean Section
15. Surgery for Cryptorchidism, Ectopic Testicle, and Scirrhus Cord
16. Surgical Preparation of Teaser Bulls, Boars, and Rams
17. Urethrostomy
18. Tube Cystostomy - Goat
19. Surgical Removal of the Urethral Process in Wethers and Ram
20. Test Surgery, Hard Milker, Leaky Teats, Lacerations, Lactolith, Super-mammary Teat Removal
21. Amputation of Claw in Cattle
22. Excision of Interdigital Fibromas (Corns)
23. Subsolar Abscess Surgery
24. Trimming of Claws, Especially in Cattle - Hoof Tester
25. Joint Flushing
26. Block Application to Claw
27. Bandaging Foot
28. Casting
29. Venipuncture Tail and Jugular
30. Tubing Stomach
31. Jugular Catheter
32. CMT + Black Plate + culture
33. Rumenocentesis
34. Pinging/Sucussion - Ballotment
35. Auriculopalpebral Nerve Block
36. Retrobulbar Nerve Block
37. IM and SQ Injection



## The App

- Develop a "cow-side" app
- Learning Mode
  - Case studies - Relevant diseases and situations
- Reference Mode with videos, other resources
  - Technique oriented
  - Learn how to give IV injections, etc.



## Number of iOS Devices

- 365,000,000 iOS devices in use (April 2012)
- iPhone available in 100 countries on 230 carriers
- 600,000 apps
  - 200,000 specifically for the iPad

## Evaluation Plan

- Measure changes in Critical Thinking Skills and Food Animal medicine knowledge
- Use a modified Non-Equivalent Control Group design
- Class of 2013 (in their sophomore year) serving as the control
- Class of 2015 (in their sophomore year) serving as the treatment
- Pre-test at the beginning of sophomore year
- Health Science Reasoning Test
- Knowledge Test
- Post-test at the end of the sophomore year

## Health Sciences Reasoning Test

- Designed to assess critical thinking skills of health sciences students & professionals
- Provides an overall score – Total Critical Thinking Score
- Sub scales
  - Analysis
  - Inference
  - Evaluation
  - Inductive Reasoning
  - Deductive Reasoning



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## Funding

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