Building student confidence using animal models

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Goals

- Discuss why use of animal models can be beneficial to student learning
- Discuss the process of model development
- Discuss models I have created and how they assist student learning

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My new challenges:

- Never enough time

- Most students are very timid with new skills
    - Multiply that whenever there may be patient pain/discomfort

- In my area, even worse with large animals

What were yours?

My goal- Make labs a more efficient, less terrifying experience for our students

My first model

- VIAHART Robbie The Rottweiler - 26 Inch Tall Stuffed Animal Plush Dog - by Tiger Tale Toys
- Latex tubing
- IV tubing
- Wire hanger
- Suture

- Goals
  - Cephalic and Jugular blood draws
  - Catheter placement and taping
  - Proper restraint

Imposter syndrome sets in...

Why did I do this? Does this do anything? Is there a benefit?

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"Development and Validation of a Model for Training Equine Phlebotomy and Intramuscular Injection Skills." *Journal of Veterinary Medical Education*(Williamson et al., 2016, p. 235-242)

- Compared equine head and neck model to cadaver model to demonstrate phlebotomy and intramuscular injection techniques

- Found that students trained both ways performed equally on a live animal

- Students found both options equally helpful

Student survey- New skills on live animals

- 100% respondents at least somewhat excited to practice new skills
  - "Love learning"
  - "Closer to my goals"
  - "Enjoy real life experience"

- 72% at least somewhat nervous to practice these new skills
  - "A life in my hands"
  - "Afraid to mess up"
  - "Risk of doing harm"
  - "Worried about social repercussions of not being immediately comfortable"

- Only 64% felt prepared
  - "More of a visual learner"
  - "A lot to remember"
  - "Don't always have most accurate technique"

Student survey- New skills after utilizing models for practice

- 82% felt at least a little less nervous after practicing with models (No one was more nervous)
  - "Felt like they've done it before"
  - "Don't feel like I'm just thrown into it"
  - "Helps but does not completely prepare"
  - "Practice without pressure"

- 94% felt at least a little more confident after the models (No one was less confident)
  - "Helps get the motion correct before live animal practice"
  - "Know the overall procedure"
  - "Feel less likely to make mistakes"
  - "Gain muscle memory"

- 91% felt at least a little more prepared after models, (1 person said they were much less prepared…)
  - "Makes me feel safer about practicing on real animals"
  - "Kinesthetic learner"
  - "Only so much talking that can be done to prepare"

Students felt more prepared and confident because of this different learning modality beyond just lecture.

Thoughts?

Developing new models

Step 1- What are you trying to accomplish?

Step 2- Does it exist? Is my administration going to laugh at me when they see the cost?

Let's look at a few

Veterinary Simulator Industries

- **Equine neck venipuncture and intramuscular injection**

Product Details — Veterinary Simulator Industries. (n.d.). Veterinary Simulator Industries. https://www.vetsimulators.com/products#equine
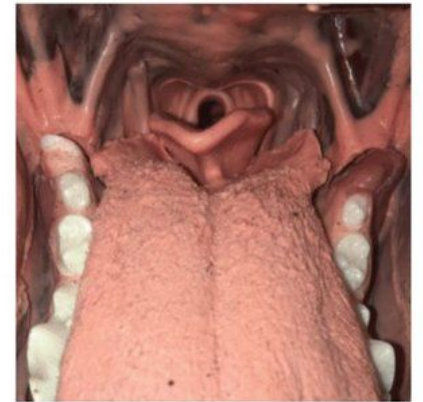
Veterinary Simulator Industries

- ## Canine Dental Technician Model

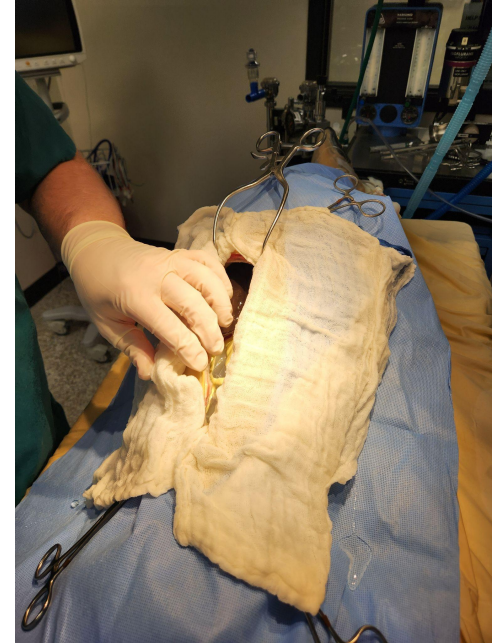*Product Details — Veterinary Simulator Industries*. (n.d.-a). Veterinary Simulator Industries. https://www.vetsimulators.com/products#canine

SynDaver

- ## Hybrid surgical canine

Step 3- Screw up your Amazon algorithm

"Your models are like the ones you could find on Wish"
    Dr. Erin Howard

Large animal identification

- Goals
  - Practice identification methods
- Supplies
  - Nasco Tag placement Cow ear model
  - Tagging supplies
  - Tattoo practice skins
  - Ear notchers
  - Pig ear pattern
  - Stapler

Artificial dental calculus and plaque

- Goals
  - Dental scaling and polishing practice before adding anesthesia
- Supplies
  - Cadaver head or skull
  - Nissin dental calculus
  - Nissin artificial plaque

https://kilgoreinternational.com/

Ultrasound practice model

- Goals
  - Familiarize with machine and orientation
  - Practice image capture
- Supplies
  - Plastic cat litter or storage box
  - Ballistics ultrasound gel
    - Humimic medical gel
  - Wood shapes
  - Oven
  - Melting chamber

Ultrasound model- Leaf

Ultrasound model- Butterfly
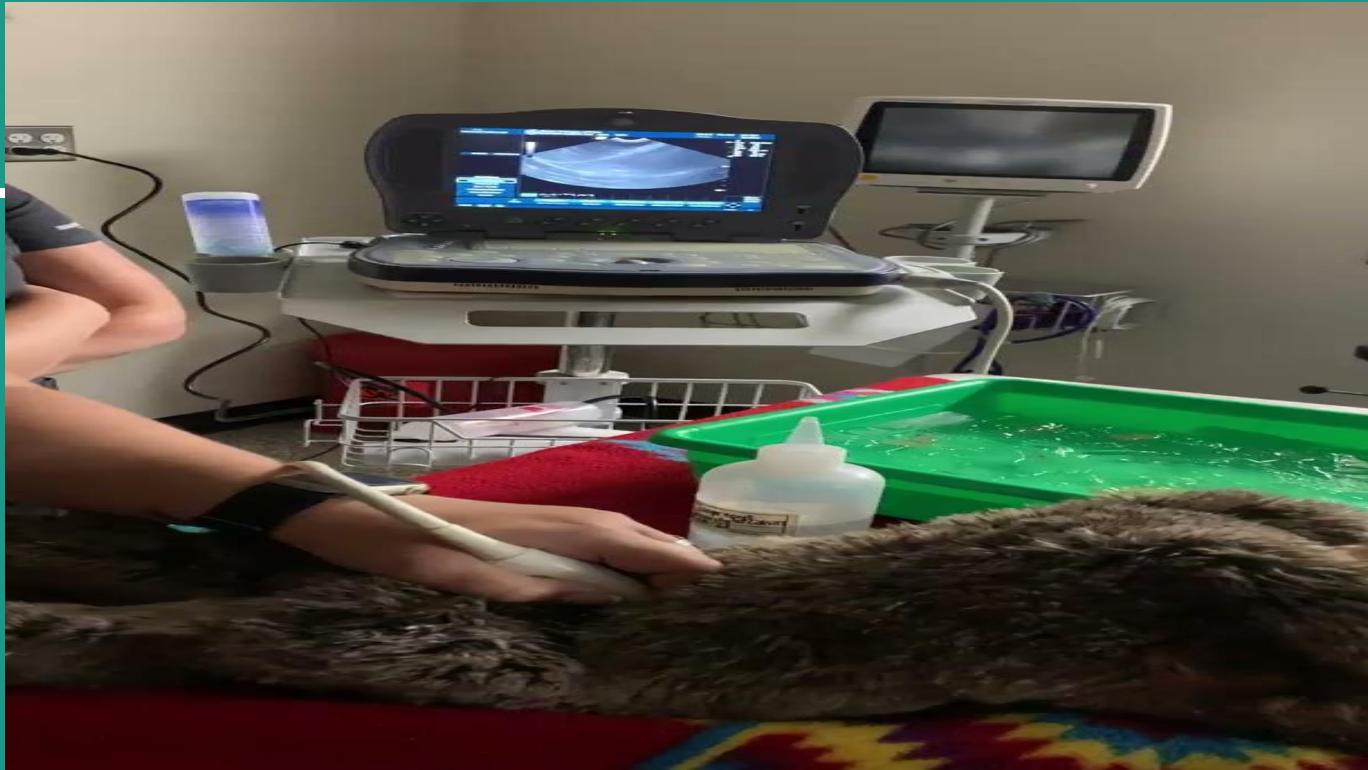
Bladder palpation model

- Goals
  - Identify bladder without the murder mittens
- Supplies
  - Douglas Oscar Maine Coon Cat Plush Stuffed Animal
  - Thick balloon
  - Panty hose
  - Suture

Cystocentesis model

- Goals
  - Practice cystocentesis with and without ultrasound
- Supplies
  - Douglas Oscar Maine Coon Cat Plush Stuffed Animal
  - Water Wubble water balloon balls (discontinued?)
  - Panty hose
  - Suture
  - IV line

Cystocentesis model

The Udder

- Goals
  - Milking protocol practice
  - California Mastitis Test (CMT) practice
- Supplies
  - Large enough bucket
  - Peach teets calf nipple with bottle
  - Super glue
  - Drill bits with drill

Udder model in use

CMT test with buttermilk

Anal glands

- Goals
  - Anal gland technique
- Supplies
  - Viahart Bobby the Boston Terrier
  - Dish washing gloves
  - Thick balloons
  - Suture

Anal gland model in use

Nail trim

- Goals
  - Practice nail trim technique
- Supplies
  - Melissa & Doug Giant German shepard
  - Floral foam blocks
  - Pretty claws
    - Clear- Jumbo
    - Black- Jumbo
    - Red- Large
  - Hot glue
    - Clear
    - Red
    - Black
  - Lego Technic axels and connectors

My nexts

- Bovine
  - For vaginal exam prep
  - Urinary catheterization
  - Rumen sounds
  - Nerve blocks
  - Epidural

- Canine endotracheal intubation

- Feline medial saphenous venipuncture

Recap

- Animal models help student learning and confidence by providing other learning modalities and allowing technique practice before live animal labs

- Development of models can be done in your kitchen and inexpensive yet still beneficial

What models are you thinking about and would you like to see?

Thank you!

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