Preparing an Effective Didactic Lecture

John Bonagura, DVM
Veterinary Clinical Sciences
College of Veterinary Medicine
The Ohio State University, Columbus

My First Lecture (yipes!)

Presentation Topics

1. Introductory comments
2. Background Information about Lectures
3. Preparing for your Class – specific steps
4. Lecture Content
5. The PowerPoint Slide Show
6. Organizing your Presentation
7. Speaking & Presentation Tips
Preparing an Effective Didactic Lecture

Introduction

- A weak moment: Accepting a lecture about how to lecture!
- What does “effective” mean?
  - A short or long-term learning outcome?
  - A teacher-learner interaction
  - High levels of entertainment?
  - Good student evaluations of instruction (SEIs)?
  - Or just developing & delivering a sound lecture?
- First…decide on your own goals for a lecture

Assumptions about Lecturing | Goals

- Audience: (current/recent) residents ⇒ teaching
  - Motivated | Smart | some lecture experience
- Our subject ⇒ professional student education
- We want to create “effective lectures”
  - Content & Organization & Delivery (+Learning)
- Try to hold the attention of the (majority of the) student audience
- We hope to receive good SEIs (↑mean ↓SD)
- Guide learning opportunities for our students, perhaps at two (or more) levels

1. Lecture Background Information
   Questions to Consider: Please Read this Slide

- What can you accomplish during a lecture?
  - What are some advantages of this format?
- How is the lecture limiting?
  - What will your students Do during class?
- What concepts, facts & applications will students retain following your lecture?
- What do students like/expect from lecturers?
Example of an “OK” lecture slide and a poor handout “slide”

Lecture Advantages

- Efficient → “transfer” of information
- Can teach hundreds (if not thousands) of vet students at once
- Opportunities to introduce new content
  - Explain difficult concepts & key facts
  - Excite: practical examples & applications
  - Use multi-media to enhance student interest

Lecture Limitations

- Passive ⇒ Somnolence ⇒ Near-syncope
- Students are unengaged: expect even more texting, websurfing, emailing + chatter
- UNH: 800/1000 students send at least one text msg during each class
  (Chronicle Higher Ed)

Can you refocus their attention?
Limitations (con’t)

- Some studies suggest low short- and long-term retention rates
- Blizard et al. (1975) characterized students’ attitudes towards basic sciences: “...passing the examinations, forgetting the whole business, and then getting on with the job of becoming a doctor.”

What do Students Expect: Simple & Easy?
Perhaps you should just aim for good SEIs

**How much will it take for a good score?**

Balance “wanting to be liked” with your own principles & perspectives about teaching
An influence of grades on SEI scores is evident, but is low ($r^2 \approx .2$)


What Do Students Like?

**Some keys to good student evaluations**

- Organized: with an easy-to-follow handout rustling papers + grumbling means...?....
- Guided: List outcomes, objectives & key words
- Effective speech: Measure, Modulate, Move
- Excitement about the subject
- Low # of presentation annoyances and Animations (like this and the last transition)
- Not all words! Images – Diagrams – Media
- Emphasis on practical (clinical) relevance
- Pauses......pose or invite questions
- A personal connection with the teacher

Preparing an Effective Didactic Lecture
Lecture Preparation: Some Specific Steps (a)

- Know your subject
  ◦ Confidence helps!
- Scale detail to Audience & Time
- Know your students (good luck with that!)
  ◦ Number
  ◦ Seating
  ◦ Pre-requisite & Following Classes
- Try to connect with your students

Lecture Preparation: Some Specific Steps (b)

- List concepts you’ll advance & explain
  ◦ Use illustrations, examples & images: make concepts come alive
  ◦ Create metaphors, analogies, or silly examples to advance key points
- Create a list of important facts you will teach during your class

Example: Define & Explain Concepts
It doesn't have to be Fancy!
Lecture Preparation: Some Specific Steps (c)

- Create logical progression to reveal key concepts, facts, terms
  - See textbooks or reviews for samples
- Create your draft PowerPoint presentation
- Divide into three or four 10–15 minute segments – build in some transitions
  - Attention spans are short in the lecture hall!
- Again….frame main points to a practical (clinical) context: for clinical & basic sciences

Create: Key Outcomes, Objectives & Words

- Learning Outcome: Measure BP noninvasively in dogs & cats using the Doppler-flow method
- Application: Apply a Doppler flow crystal to record arterial flow in the canine & feline metacarpus
- Review ? – Describe the relationship between BP cuff diameter & BP measurement errors
  - Draw the normal arterial pressure waveform & label systolic, diastolic & mean BP (+ values)
- Key words: aneroid manometer, hypertension, systemic vascular resistance

Example: Provide some Memory Cues

Chronic Therapy of Canine CHF

- Dogs
- Are
- For
- Special
- People

- Dietary modifications
- ACE-inhibitor
- Furosemide
- Spironolactone
- Pimobendan
Lecture Preparation: Some Specific Steps (d)

- List content needed to illustrate your lecture
- ID Links to web resources
  - Need a “backup plan”
- START with a case, situation, problem, or story
  END explaining how it resolved
- Consider techniques to engage students actively & keep them involved:
  - PLAN to Walk into the audience ⇒ pose question(s)
  - Project a question ± lecture-response units (clickers)
    - Offer “unknown” images or media to interpret

Example: Movies – Videos

Equine study: Continuous heart murmur
Ruptured aortic valve sinus (left-to-right) shunting

Case “vignette”: Healthy 14 yo TB gelding with loud murmur: What’s your diagnosis?

Auscultation: Holodiastolic, musical (vibratory) murmur
Diagnosis: Aortic regurgitation (due to degenerative valvular disease)
Lecture Preparation: Some Specific Steps

- Decide how to pitch it ⇒ top 1/2 (?)
- Don’t assume students remember
- Provide normal comparisons
- Consider “levels” for professional students
  - Lecture should emphasize “core” or “entry-level”
  - Reading assignments: specify “core” & “more advanced” with two levels of review questions
  - Reference handouts: use two-sized fonts
  - Make examination content clear
- At the presentation’s end: summarize

Presentation Topics

1. Background Information about Lectures
2. Preparing for your Class – specific steps
3. Handouts, Readings, Reference Material
4. Lecture (Presentation) Content
5. The PowerPoint Slide Show
6. Organizing your Presentation
7. Speaking & Presentation Tips

Handouts & Reference Materials

Outlines or PowerPoint notes
- Leave room to write (↑retention)
- Consider giving them the words, line-art & diagrams but not medical images

Textual reference materials
- Outcomes, objectives, key words
- Reading assignments:
  - Very specific ⇒ objectives
- Supplemental notes:
  - Pros/cons
Preparing an Effective Didactic Lecture

Posting Digital Content
S/he likes it!
Posting lectures: color PDF
◦ Can use low resolution or Flash
◦ Copyrighted images: remove if in doubt
◦ Borrowed slides: best to attribute source!

Podcasting
Supplemental media
◦ Movies
◦ iSpring® Flash movies
◦ Sound-files
◦ Self-study guides
◦ Self-assessment

4. Content You (might) Need for Your Lecture
› Organizational slides –
  ◦ Roadmap & Transition Slides
› Word slides – Too many are boring, BUT...
  for some learners word slides are helpful
  ◦ Use your judgment....fit your style
› Pictures – Professional & related to subject
  ◦ Irrelevant pictures will distract
  ◦ Exceptions: transition, making a dramatic point

A good Transition Slide: The first EKGs
Augustus Desiré Waller
the Electrical Activity of

Einthoven
Preparing an Effective Didactic Lecture

Content You (might) Need for Your Lecture

- Diagrams/medical cartoons/line art
  - For showing concepts, relationships and work-flow
- Media – Movies, Animation, Sound
  - Learn to make these work on your laptop & on other computers
- Hyperlinks –
  - Within-the-presentation navigation
  - Linking out to the Web
  - Accessing programs (3D, CT, Smartboard)

Atrial & Ventricular Activation Processes
(Overview)

Drawing courtesy Dr. RL Hamlin

5. Finalizing your PowerPoint Slide Show
I can show one PP “slide” every:

a) 30 s
b) 60 s
c) 120 s
d) 180 s
e) just watch me go!!
  (weeeeeeenergggggggggg)
5. Slide Show – Technical Points

- Slide Animations: Pros and cons
  - Gradual disclosure of word lists
  - Starting media automatically
- Develop your own slide masters & formats
- Develop technical know-how for pictures
- Learn to use media within PowerPoint
- Try programs like Turning Point for audience interaction with response units (‘clickers’).
- Newer on-line programs allow students to interact with instructor & digital presentation

6. Organizing Your (final) Presentation

- Return to your draft presentation
- Insert: word slides, images & media
- Perform a slide count
- Consider adding a case vignette or practical example to start off (and conclude)
- Identify specific audience interactions you will employ during the lecture (add to speaker notes)
- Insert 3-5 transition (or roadmap) slides
- Include a summary slide

Preparation for moving to the next slide
7. Speaking & Presentation Tips – Be Yourself

- Read a book or literature on the subject
- Do rehearse–record–video (phone-a-friend)
- Practice: measured–modulated–moving
  - Consider podium posture
  - Plan to move
- Use speaker notes or cards or ✪ as reminders
- Plan your specific audience interactions ✪
- Check out the room, projector, lights & mic
- Relax before class Preview a few slides –
  Chat with students – Drink
- Ask for a (formative)

7. Presentation Pointers

- Be enthusiastic!
- Get them interested right away!
- Practice smiling + breathing
- Show them your roadmap + lecture goals
- Use the microphone effectively
- Use the laser pointer properly (and safely)
- Use humor with caution

Create More Classroom Interaction

![Image of classroom interaction]

Preparing an Effective Didactic Lecture
Interacting with Students in Lectures:
Students can work in Small Groups: *Challenging*

- **Cases**: Respond to questions about workup & treatment
- **Open-ended questions**
- **Clicker teams**
- **5-minute papers**
- **Team-based learning**
  (See Bender, H)

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Integrating with Students: Question-on-the-slide
What is the heart rhythm Diagnosis?
Canine (English Bulldog with RV OM  Telemetry Lead (25 mm/sec)

![ECG Graph]

*Using the Pen tool to “draw”*

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Interacting with the audience
Lecture Response Units (Turning Point)

My ECG Diagnosis is:
1. AV block (2nd degree)
2. Sinus arrhythmia
3. Right ventricular hypertrophy
4. Myocardial ischemia
5. Hyperkalemia
You are interested in determining the sample size needed for a study of cats with systemic hypertension.
- Difference of interest is 20 mm Hg
- Groups of CKD and age-matched controls
- SD for population is 26 mm Hg
- How many cats are needed for each group?

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**Do read and review your Evaluations**

*Can Improve Teaching Scores*

- 19,306 evaluations over a 5 year period
- *Anesthesiology* 2010

**Ask for a formative Peer review**

**Give yourself a break!**

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**Summary: Preparing an Effective Didactic Lecture**

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14