

# **AXIO LEARNING CONFERENCE**

**SEPT. 18 & 19**  
**KANSAS STATE UNIVERSITY**  
**STUDENT UNION**





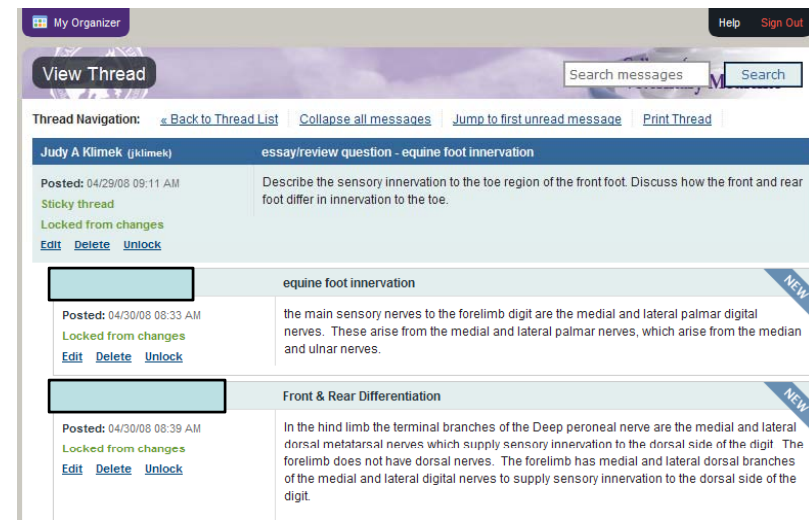
## To Post or Not to Post

Using A Course Message Board To Promote Active Learning And Practical Application Of Content In A Veterinary Anatomy Course

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# Objectives

- This presentation will focus on the use of the message board to increase participation and higher-level thinking in a veterinary comparative anatomy course, through posting of clinical case questions and application questions to which students can respond for extra credit.



The screenshot shows a web-based message board interface. At the top, there is a navigation bar with 'My Organizer', 'Help', and 'Sign Out' links. Below this is a search bar with the text 'Search messages' and a 'Search' button. The main content area is titled 'View Thread' and includes navigation links: 'Back to Thread List', 'Collapse all messages', 'Jump to first unread message', and 'Print Thread'. The thread itself is titled 'equine foot innervation' and is posted by 'Judy A Klimek (jklimek)'. The post content reads: 'Describe the sensory innervation to the toe region of the front foot. Discuss how the front and rear foot differ in innervation to the toe.' Below the main post, there are two additional posts, both marked as 'NEW'. The first of these posts is titled 'equine foot innervation' and discusses the main sensory nerves to the forelimb digit. The second post is titled 'Front & Rear Differentiation' and discusses the terminal branches of the Deep peroneal nerve in the hind limb. Each post includes a 'Posted' timestamp, a 'Locked from changes' status, and 'Edit', 'Delete', and 'Unlock' options.

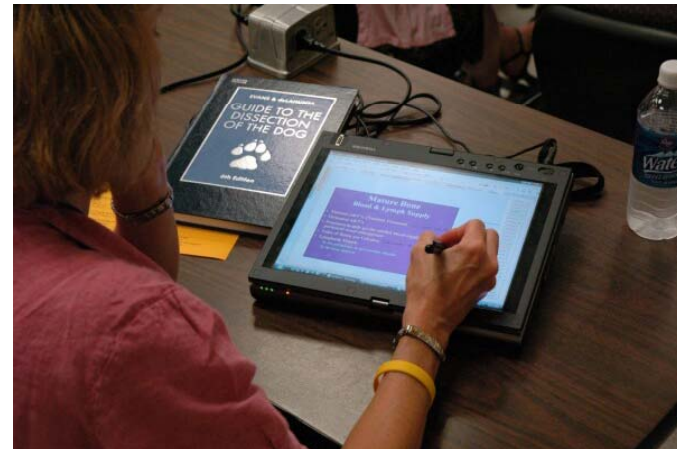
# The Setting

- Coles Hall is the center building of the veterinary medicine complex, where first-, second- and third-year students spend their day.
- It's a small world at the vet college...



# The Students

- First year vet students (108 of them) are in class together all day, every day.
- The college recently went paperless; all first-year students have a notebook computer with class notes pre-loaded, and they bring the computer to every class (which means they can access the internet anytime).
- There is a lot of communication between classes.



# The Students

- In the fall first-year students have 14-17 hours of lectures per week, and 14-15 hours of lab per week. They have exams Friday mornings, and are scheduled to visit the clinics on Friday afternoons.
- We expect that they will work this 35-hour per week job, and also study 3-4 hours each night. We are delusional that way...



Students taking notes in lecture.

# AP 705, Veterinary Comparative Anatomy



- The students take a canine anatomy course in the fall of the first year, and do a detailed dissection of a dog cadaver.
- Veterinary Comparative Anatomy is a lecture and dissection course taught in the spring of the first year of the veterinary curriculum.
- Animals studied include the horse, ruminants (cattle and goats), chicken and pig.
- Concepts learned in the fall canine course are built upon in the spring.



Clinician guest instructor quizzing student on live horse.

# AP 705, Veterinary Comparative Anatomy



- The course meets 3 afternoons per week for one hour of lecture, followed by 3 hours of lab.
- I have been the coordinator of the course for about 7 years, and have taught in the course since 1996.
- I began using K-State Online as soon as I took over the course:
  - Grade book only at first.
  - Chat room for evening review sessions before exams for about 2 years.
  - Message boards for application and thought questions, also for the last 2 years.

# AP 705, Veterinary Comparative Anatomy



- When I took over the class, there was a quiz at the end of every day that included information from that day's lecture and lab. There were no hourly exams.
- What I noticed with this system was a high level of student stress, lots of memorization, and very little discussion of concepts.
- At the same time I was also involved with Peer Review of Teaching, and was thinking about evidence of/documenting student learning.



Lab instructor with students discussing a horse skeleton.

# Challenges to Deep Learning

- We had limited lecture time to discuss the clinical relevance of the material.
- Students needed the entire lab session to complete their dissections, and were not thinking deeply about or discussing the topics. They crammed for the quiz each day, and then moved on to the next assignment.
- Their heavy credit load meant that there were competing demands on their time outside class, when they might have been able to discuss concepts.



# Moving Away from Memorization

- I knew I wanted to try to change the way students were learning the course material...
- I initially modified the quiz format to be every other day; this helped with the stress level and gave the students at least one unhurried day to catch up, and hopefully discuss what they were learning, however...
- I still did not observe much discussion about the concepts presented in lecture.



Lab instructor with students dissecting a horse.

# Moving Away from Memorization

- The next change I made was to take the lecture material out of the quizzes, and give written tests throughout the semester. Lab quizzes continue to be given on an every-other-day basis.
- The rationale for this change was that the testing cycle for conceptual information would be longer (several weeks), thus allowing more time for students to process and interact with the material.
- This has definitely been a positive change from my perspective.



# Moving Away from Memorization



- The most recent change has been the addition of the message board as a tool to promote higher-level thinking regarding conceptual course material, and to encourage discussion of the clinical application of gross anatomy.

# What I Hoped to Accomplish

- I wanted to use the message board as a way to encourage students to think about study questions and cases, and try to apply the information they learned in class to solve problems. I invited a few clinicians to participate in posing questions and providing feedback.
- I also hoped that the students would learn from and pose questions to each other.
- I offered some (minimal) extra credit as an incentive to participate.



This is not Kansas, by the way...

# Posting Threads

- I typically would work on questions to post during the day, and post them as I completed them (or else I would forget!). I would either send an e-mail to the class to let them know there was a new post, or I would post an announcement.
- Students would also sometimes start threads for the rest of the class.
- I would monitor the responses for accuracy, comment/correct where necessary, and close the thread when I judged it to be “finished”.
- I occasionally posted links to interesting articles, and let the students read the article and comment.



# Examples of Questions and Problems Posted



- I use images whenever possible. This thread got 24 replies:
- “Here is a chance for you to practice applying some of the information from today's assignment. Comment on the ages of the two horses in the attached photo, using characteristics of their incisor teeth.”

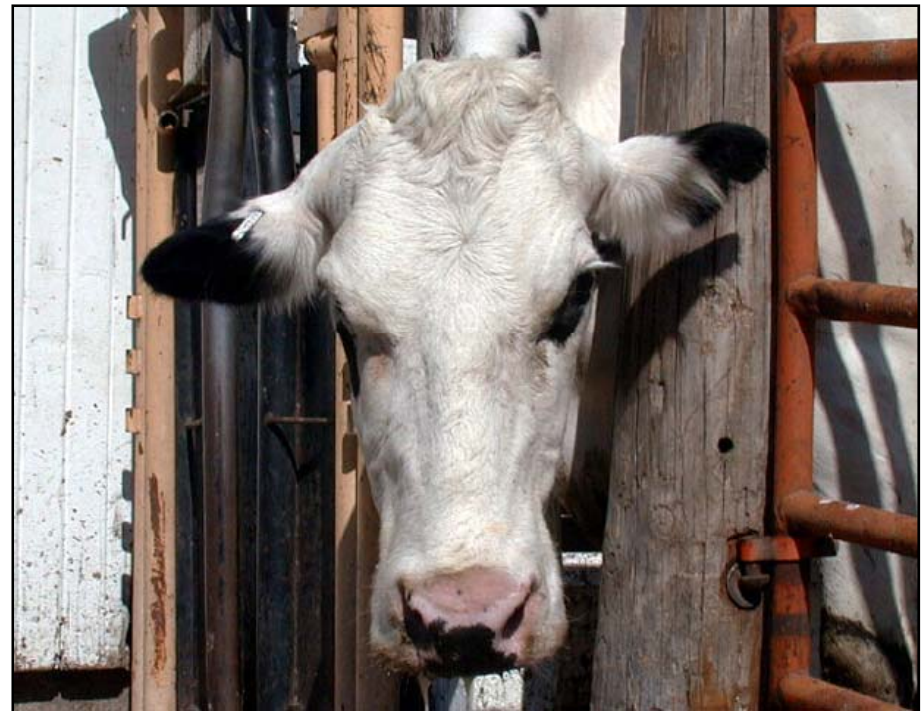
# Examples of Questions and Problems Posted



- I tried to post discussion threads that would leave lots of room for multiple responses (34 replies for this one):
- “Use this thread to explain ONE concept of normal conformation of the horse front or rear limb - normal angles of the joints, normal stance, balance - whatever you can find or already know about normal limb conformation. Bear in mind that different breeds may vary somewhat, but good conformation is somewhat generic. If you can find an illustration that helps you explain what you are trying to say, feel free to attach it.”

# Examples of Questions and Problems Posted

- This was an image I posted with a question from one of the guest clinicians:
  - "What cranial nerve deficits are present in this cow? What bacterial disease of cattle commonly causes these signs?"
- They loved the clinical cases, although they commented that they felt inadequate to answer them sometimes.



# Example of Question Posted by a Student



- Sometimes students posted questions; I had told them they could, if they had tried to find the answer on their own before posting.
- This thread got 22 replies, mostly from classmates:
  - “I can't say I've ever seen a case of laminitis in cattle. There may be many reasons for this, but what I'm curious about is if it has anything to do with the way cattle use almost the entire sole of the hoof for weight bearing, whereas the horse uses mainly the heel area. Also probably in huge part to horses receiving a much higher grain diet than cattle.”



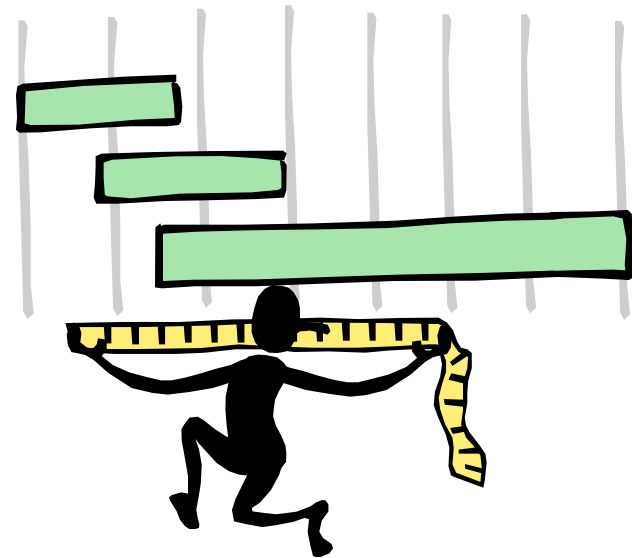
# Credit for Posting and Reading



- Periodically I printed a report of the message board activity to enter extra credit in the gradebook:
  - Report gives lots of statistics, but I only needed # threads read and # posts.
  - 1 point per 2 original threads or replies posted, maximum 5 points
  - 1 point per 50 threads read; maximum 5 points
- The amount of extra credit was not enough to substantially change a grade, but would be enough to bump up a person who was close to the grade cutoff.
  - Students will do a LOT of work for a few points of extra credit!

# Evaluation – Data Sources

- Reports of message board participation (through K-State Online) every couple of weeks.
- Comments on teaching evaluations.
- Informal conversations with students.
- Survey offered 3/14/08 through 4/4/08 (n=63/107; 58.8%).



# Benefits Reported by Students

- The message board was fun and informative.
- Students learned things they missed in class.
- Students got an opportunity to see what and how much their classmates knew.
- “I enjoy the message board, as it encourages us to consider anatomy from a practical, clinical point of view. It’s also great to have access to what my classmates “bring to the table” ...for someone who has no equine experience, I learned a lot from them, too!”

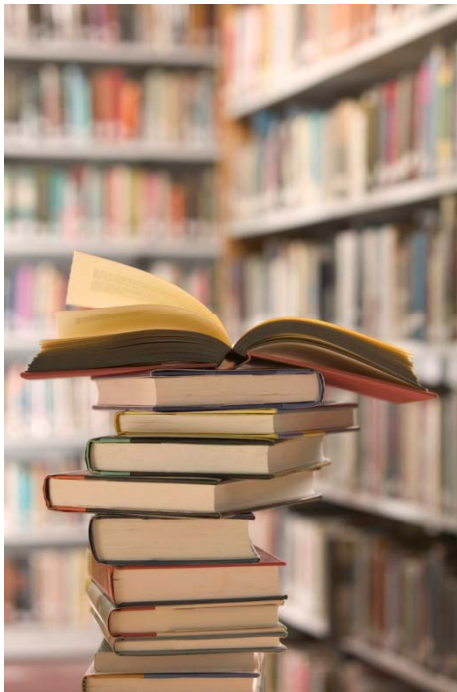


# Benefits I noticed



- Opportunity for the instructor and the student to identify student misconceptions.
  - I posted threads about information I might test them over later, and could see by the responses where I needed to review.
  - I could often clear up misconceptions at that point, without using class time.
- High participation rate. Nearly everyone got all the points possible.

# Benefits I noticed



- Evidence of students doing research to respond to threads (external links, citations, etc.).
- Generation of follow-up questions by the students.
- I learned from the students' knowledge, and also from researching answers to some of their questions.
- The message board reinforced the relevance of gross anatomy.

# Survey Results on Reading Posts (% agree, or strongly agree)



- “Reading posts on the message board is enjoyable.” (55.6%)
- “Reading posts on the message boards enhances my learning of gross anatomy.” (69.8%)
- “I read posts in their entirety if I click on them.” (57.1%)
- “I learn things from the message board posts that I missed in class.” (39.6% neutral; 34.9% agree or strongly agree)
- “Message board posts are a good way to incorporate the clinical relevance of gross anatomy without using class time.” (69.3%)

# Survey Results on Reading Posts (% agree, or strongly agree)



- “I feel obligated to read posts on the message board.” (26.9%)
- “I feel the amount of time I spend reading posts is appropriate.” (68.2%)
- “The amount of credit offered for reading posts is appropriate.” (68.3%)
- “The level of feedback provided by the instructor is appropriate.” (79.3%)
- “I believe reading posts for extra credit should be continued.” (87.3%)

# Survey Results on Posting (% agree, or strongly agree)



- “Posting threads and replies on the message board is enjoyable.” (44.5%)
- “Posting a thread or reply on the message board enhances my learning of gross anatomy.” (61.9%)
- “I research the question before I post a thread about it on the message board.” (64%)
- “I learn things from posting on the message board that I missed in class.” (48.1%)
- “My posts to the message board have resulted in my better understanding of the clinical relevance of gross anatomy.” (50.8%)

# Survey Results on Posting (% agree, or strongly agree)



- “I feel obligated to post threads or replies on the message board.” (22.2%)
- “I feel the amount of time I spend posting threads or replies is appropriate.” (63.5%)
- “The amount of credit offered for posting to the message board is appropriate.” (76.2%)
- “The level of feedback provided by the instructor to my posts is appropriate.” (76.2%)
- “I believe extra credit for posting to the message board should be continued.” (85.7%)

# Results

- Based on the survey results students were very satisfied with their participation in the message board.
- Sixteen of the 63 people who responded to my survey also wrote comments in the “additional comments” section.
- Quite a few of the points they made I had already been aware of before they commented.
- What follows are some of the issues we identified, as well as suggestions for each issue.



# Issues That Arose (Suggestions)



- Instructor posts that were announced during the lecture for some other course were viewed as disrespectful to other instructors, and...
- Students posting during other courses, since they have their computers with them at all times.
- (Instructors need a way to limit availability of the board, and/or schedule in advance when new threads will appear – similar to the way we can schedule assignments to be released.)

# Issues That Arose (Suggestions)

- Some students might just “click through” a bunch of posts, to get the credit for having read them. (Instructors could be provided with statistics on how long a student spent on a particular post.)
- Some students felt that it was too hard to sort through all the responses to see which ones I had commented were correct. (Instructor can post a summary answer rather than comment on individual posts, for the people who just want to read the correct answer.)



# Issues That Arose (Suggestions)



- Some students observed classmates making fun of other people's posts. (Instructor needs to set the expectations of respect and professionalism.)
- Some students saw it as "busy work" or felt obligated to post. (Make sure the message board is either optional, or not excessively weighted.)
- Some students felt that the threads were closed before they had a chance to respond, and/or that a previous poster had "said it all". (Instructor needs to develop enough questions or cases to post that there are always some open for comment.)



# Issues That Arose (Suggestions)



- Students noticed that some classmates wanted to outdo each other and get in the last word. (Peer pressure??? Everything I need to know I learned in kindergarten???)
- Sometimes students posted “frivolous” threads, or threads for fun, possibly to get more points??? (Instructor should monitor closely thread content and delete inappropriate posts. I also created a “just for fun” board to allow students to post fun stuff there, with the understanding that those posts were not counted.)
- Big time commitment to monitor the board. (Cloning of the instructor???)

# Other Interesting Observations

- Underachievers: There were students who never read any threads...seems like that would be an easy 5 points to me!
- Overachievers: Some students read MANY posts, even after reaching the maximum extra credit. And some students posted on what seemed like ALL of the threads, even after reaching the maximum credit.
- Procrastinators: The amount of posting increased dramatically near the end of the semester, and I had to post new threads more rapidly.



# Conclusions

- The message board was a very useful tool for teaching and learning in Veterinary Comparative Anatomy.
- The time commitment on my part was worth the results.
- I will take student comments into consideration when I implement it in Spring 2008, especially with regard to not posting new threads when they are in class (but I can't control their access beyond that).

