

Objectives

- Define active learning
- Differentiate between active and “traditional” lecturing methods
- Identify the benefits of active learning over traditional lecture
- Describe and demonstrate several examples of active learning techniques
- Group sharing of active learning experiences

Beyond the Podium and PowerPoint: Teaching Techniques to Support Active Learning

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Why are you here?

- Interaction with other faculty who share a common interest
- Modeling — behavior in action
- Practice
- Opportunity to share personal experience
- Networking
- Motivation to excel

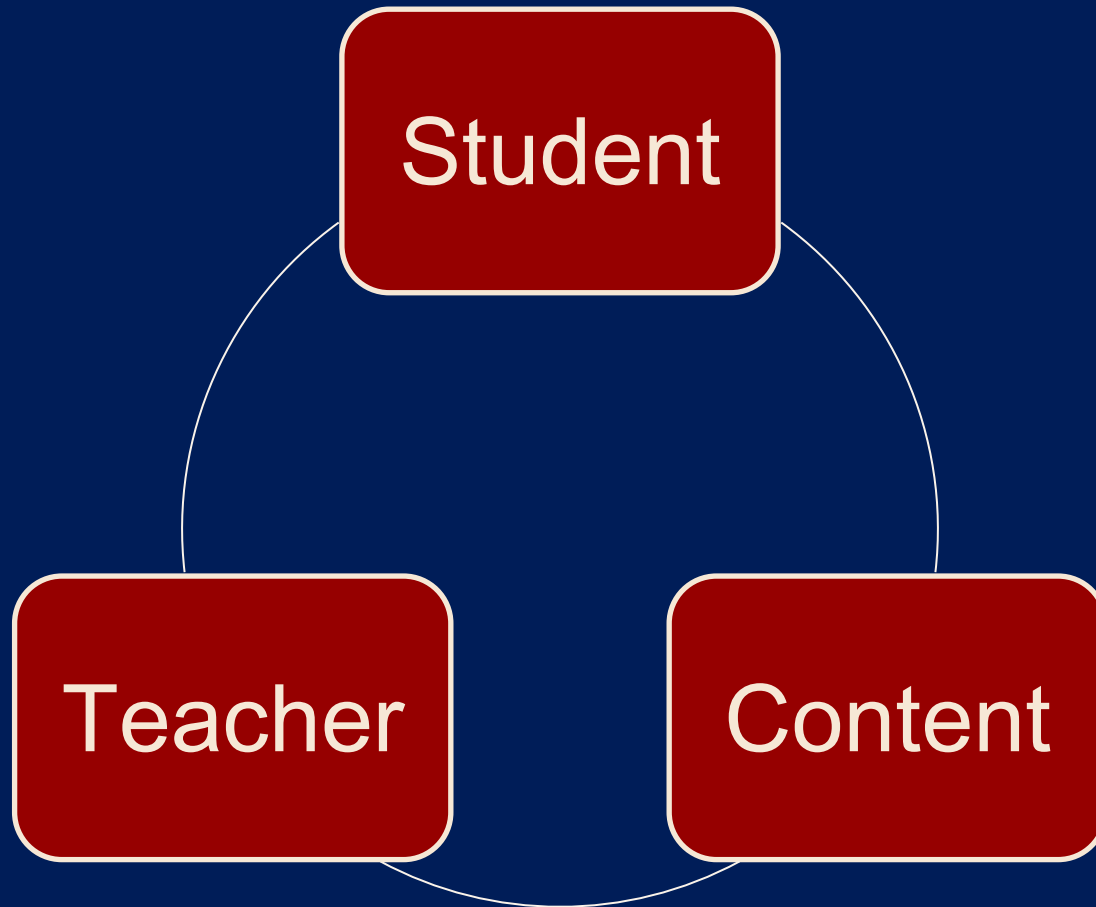
Why are you here?

Traditional Lecture

- Focus is on content delivery
- Participation is limited or superficial
- No learner engagement: listen and take notes
- Risk averse, safe: I won't bother you; you won't bother me.
- Can be rigidly time bound
- The “fourth wall”

Teaching Triad

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Active Learning Alternatives

- Promote higher order thinking (analysis, synthesis, evaluation, application)
- Demand critical thinking
- Require student interaction
- Utilize writing—not just note taking
- Demonstrate problem-solving
- Improve communication skills

“Active learning is, in short, anything that students do in a classroom other than merely passively listening to an instructor’s lecture.”

Paulson & Faust (2009) Active and Cooperative Learning
www.calstatela.edu/dept/chem/chem2/Active
Accessed 20 Sept 2009

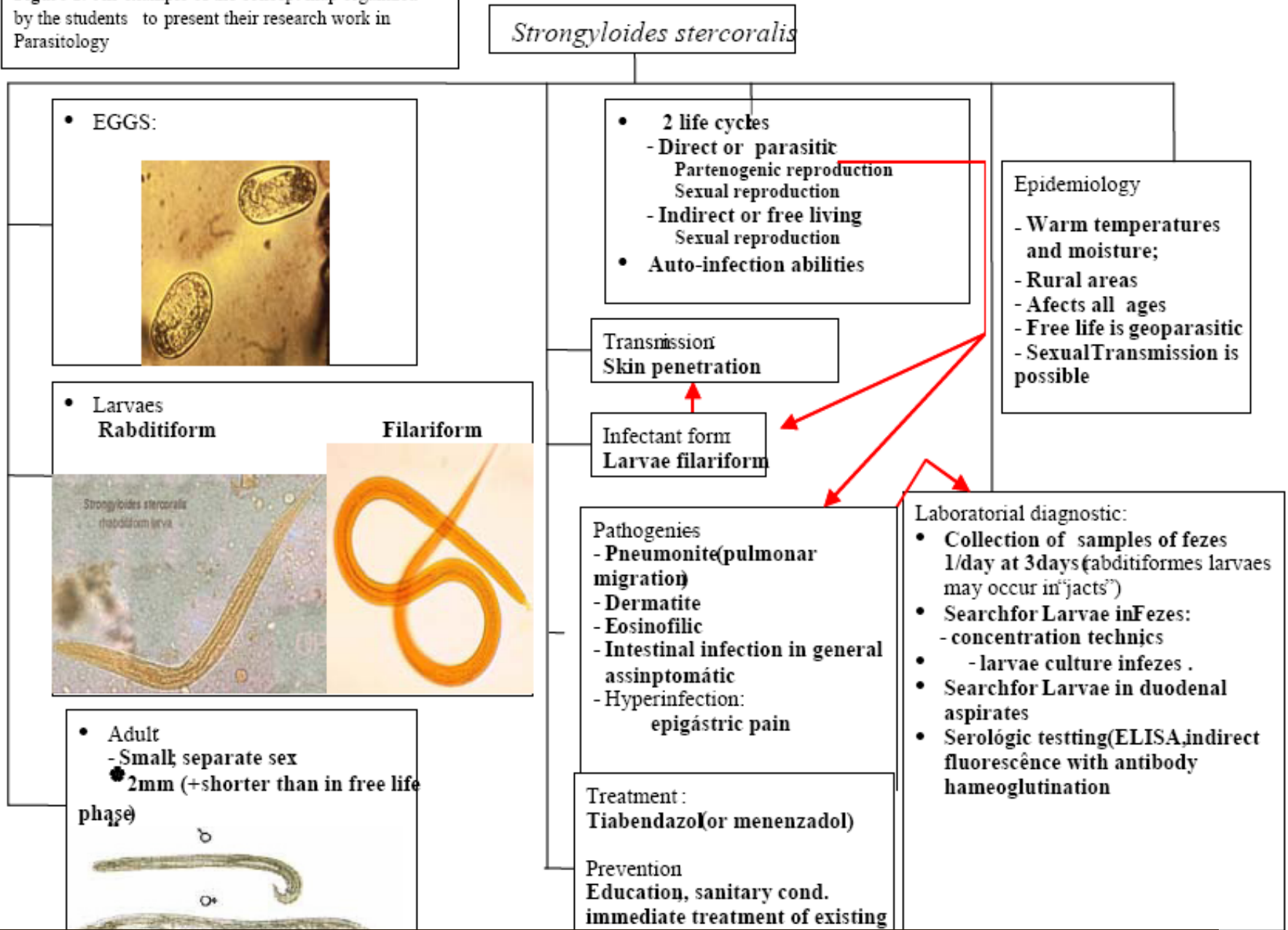
Active Learning \neq Fun

Active Learning > Fun

Concept Mapping

- Online, collaborative software allowing visual representation of complex relationships
- Examples:
 - Cmap
 - <http://cmap.ihmc.us/conceptmap.html>
 - Compendium
 - <http://compendium.open.ac.uk/institute/about.htm>

Figure 1. An example of the concept map organized by the students to present their research work in Parasitology



Write-Pair-Share

- Instructor poses a question, problem, dilemma, or scenario
- Students consider options, conditions, variables, etc and write a response
- Students discuss their position with their neighbor
- Instructor solicits representative responses from the group

Brief Writing

- Beginning of class
 - Advance organizer
 - Connect to previous work
 - “Teaser”
- Middle of class
 - Check comprehension
 - Synthesize content
- End of class
 - Reflect on learning
 - Pose question for next class

Case-based Learning

- Prepared, detailed cases are presented to the class
- Material serves as stimulus for achieving clearly defined learning objectives
- Solutions may be worked in group or individually followed by group.
- Emphasizes process goals in addition to content mastery

Small Group Discussion

- Groups are presented with a problem without simple solutions
- Group attempts to achieve consensus around an answer, policy, or procedure
- Can include formal writing as product
 - Comparison and contrast
 - Position papers (brief, one to two paragraph)
 - Treatment plan
 - Narrative writing (e.g., conversation with pt)

Left Brain / Right Brain

- Contrast content heavily weighted toward technical, empirical, factual information with aesthetic, subjective, emotional information
- Poetry, narrative writing, imagery, fine art, music, photography, etc.

Minamata Disease

The concentration of mercury is very low in most foodstuffs (below 0.02 mg Hg/kg). However, certain types of marine fish (such as shark, swordfish, and tuna) and certain fish taken from polluted fresh waters (such as pike, walleye, and bass) may contain high concentrations of mercury. In this setting, mercury is almost completely in the form of methylmercury. It is not uncommon that concentrations of methylmercury in these fish are 1 mg/kg or even higher. Severe epidemics caused by the consumption of fish polluted with mercury have been reported from Minamata in Japan [6].

Monitoring of mercury in blood is commonly used to identify and quantify exposure to methylmercury [9]. Heavy consumers of fish, in particular those who eat mercury-containing species, may have blood mercury levels in excess of 20 µg/L (normal value less than 5 µg/L).

There is also concern that dietary exposure of children and fetuses (via the mother) may result in neuropsychological deficits [10]. (See "Etiology of birth defects").

Up To Date Online 17.2, Accessed 18 Sept 2009

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William Eugene Smith, 1971
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Reflection on Learning

Write down the two most important things you've learned in the last hour.

