



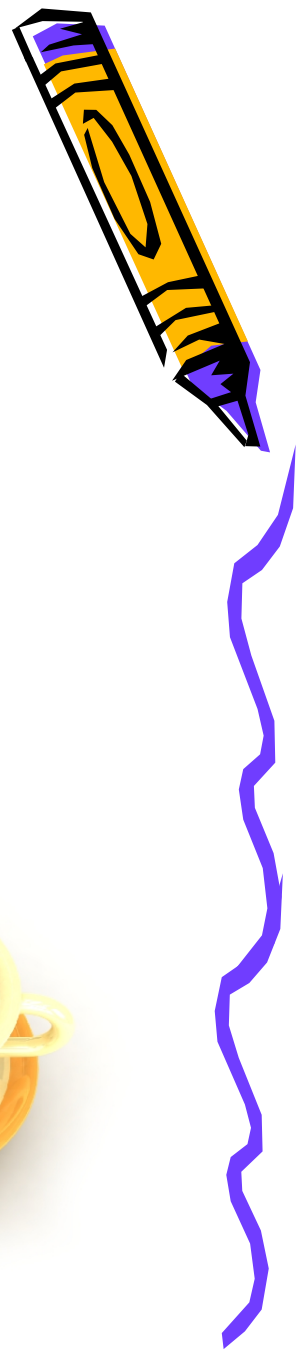
Lecture Basics

India Lane
Educational Enhancement, UTCVM



You be the reviewer...

- What makes a good lecture?
- What makes a weak lecture?



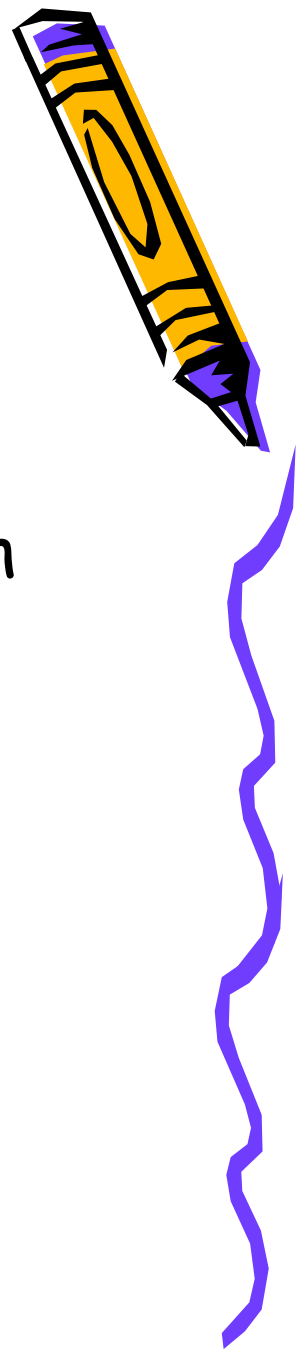
What do others say Medical Students

Effective

- Enthusiastic
- Models, Demos
- Interactive

Ineffective

- Excess research commentary
- Reading from slides



Nichols et al, IAMSE, 2006

What do others say Graduate Students

Effective

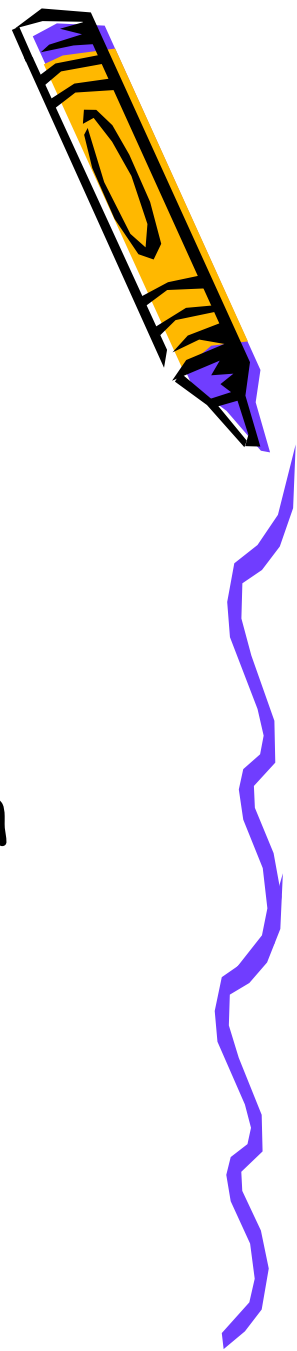
- Pitched to general audience
- Linked to big picture
- Conducive to questions; time for questions
- Within appropriate time frame

Ineffective

- No general introduction or link to big picture
- Too much jargon, usually undefined
- Expert level only



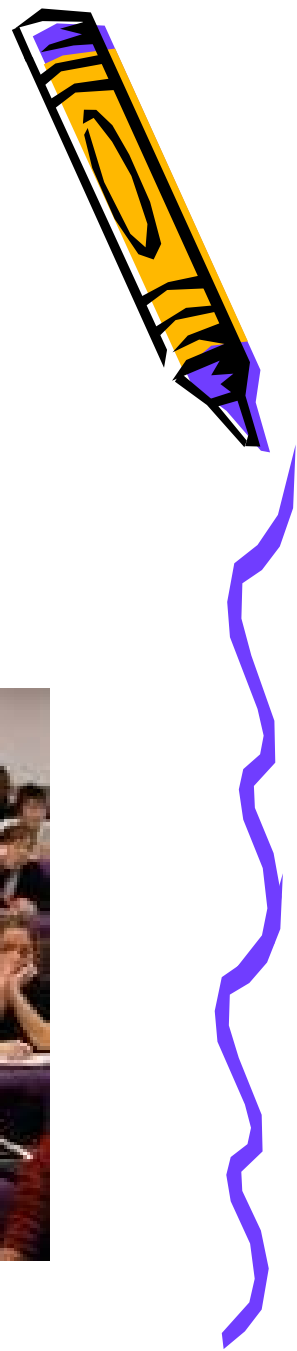
Fundamentals of the Lecture



- When are Lectures Useful?
- Types of Lecture Formats
- Planning the Lecture
- How to make a point... and maintain attention
- Beginnings and Endings



When are lectures useful?



When are lectures useful?

- The purpose is to teach information
- The presenter is effective, comfortable and the "expert"
- The learners are able to assimilate from lectures
- Group size is moderate to large
- Facilities are adequate

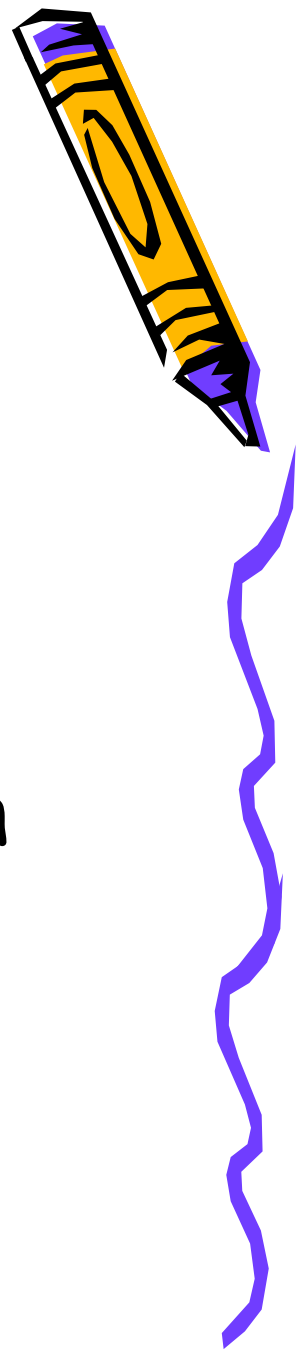


When are lectures useful?

- The purpose is to teach information
 - Not readily available
 - Diverse, scattered
 - Current
 - Limited time available
 - Explain difficult concepts or analysis of issues
 - Demonstrate relationships between information



Fundamentals of the Lecture



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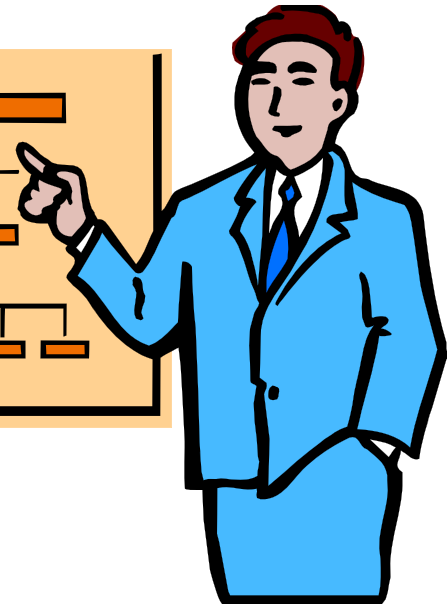
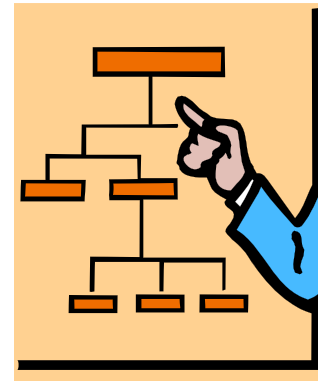
Lecture Types

- Hierarchic
- Problem - centered
- Chaining
- Comparison
 - Paired classifications
- Logical dichotomy
- Network



Hierarchical

- Level 1 point A
 - Level 2 point a
 - Level 2 point b
- Level 2 point B
 - Level 2 point a
 - Level 2 point b
 - Level 3...



Common Organizing Principles

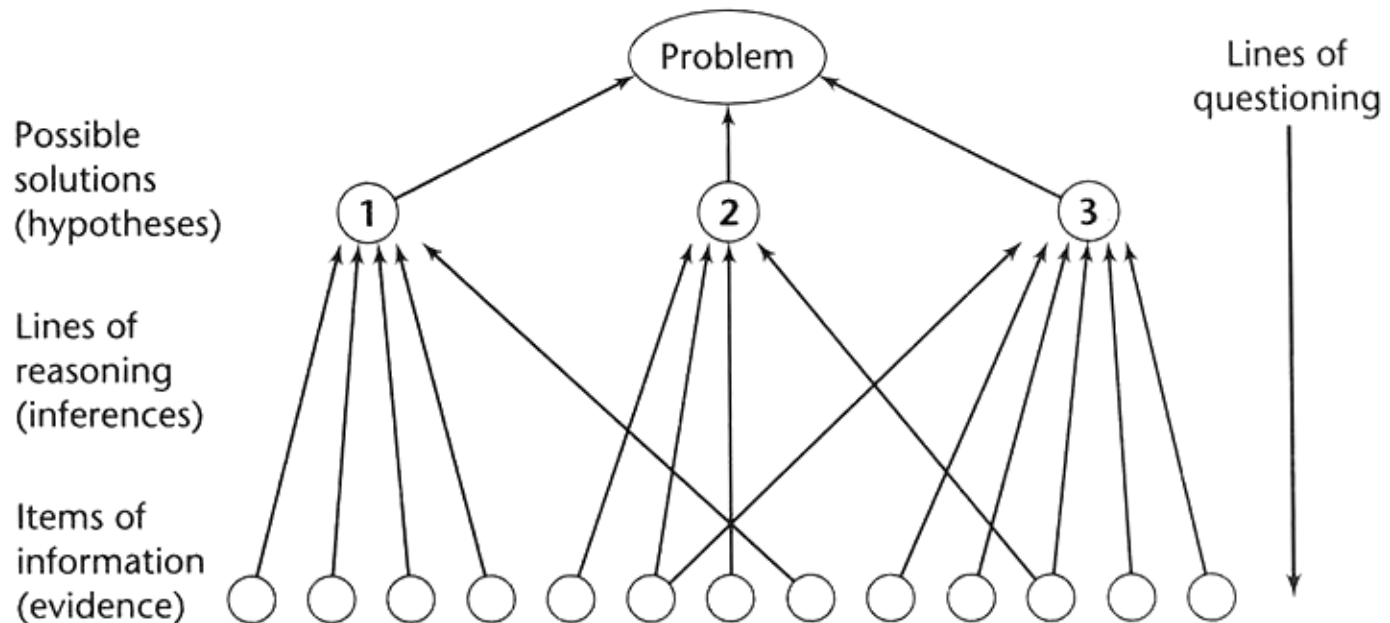


- Cause → to effect
- Historical time sequence
- Phenomenon or examples ↔ theory
- Pro versus con or compare/contrast
- Familiar → unfamiliar
- Concept → application

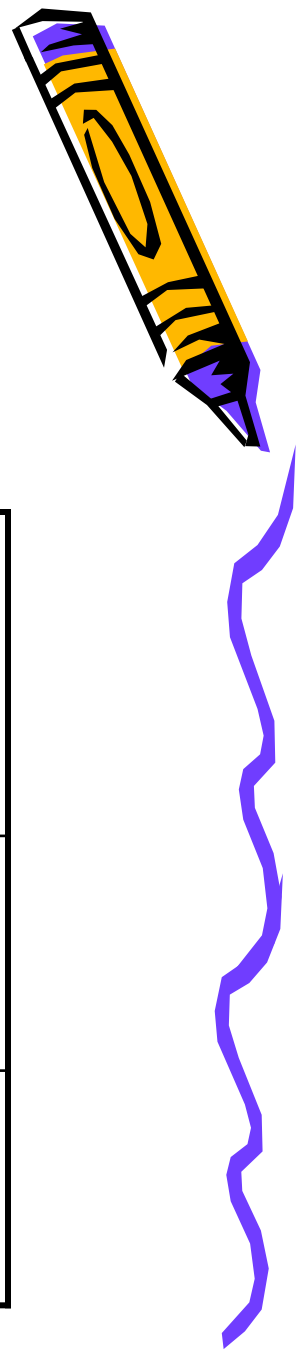


Problem Centered

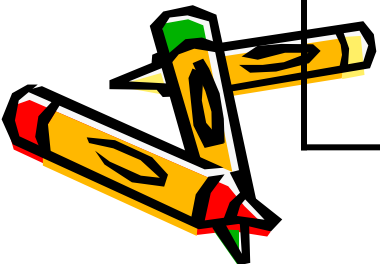
FIGURE 5.3. DIAGRAM TO ILLUSTRATE
THE PROBLEM-CENTERED LECTURE FORM.



Compare/Contrast

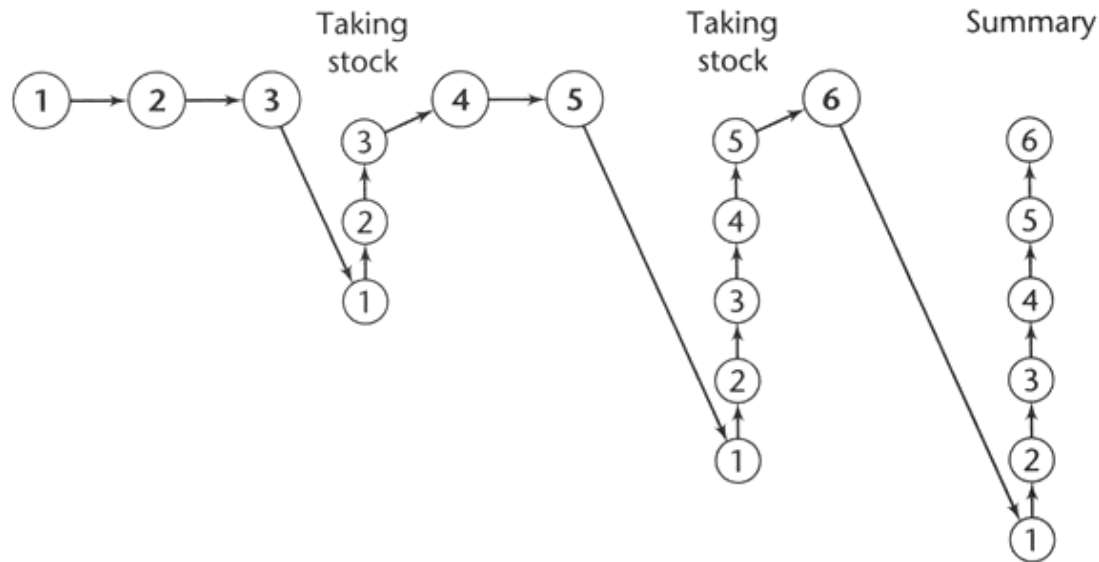


Criterion	Upper limb Dog ARF	Lower limb Cat CRF

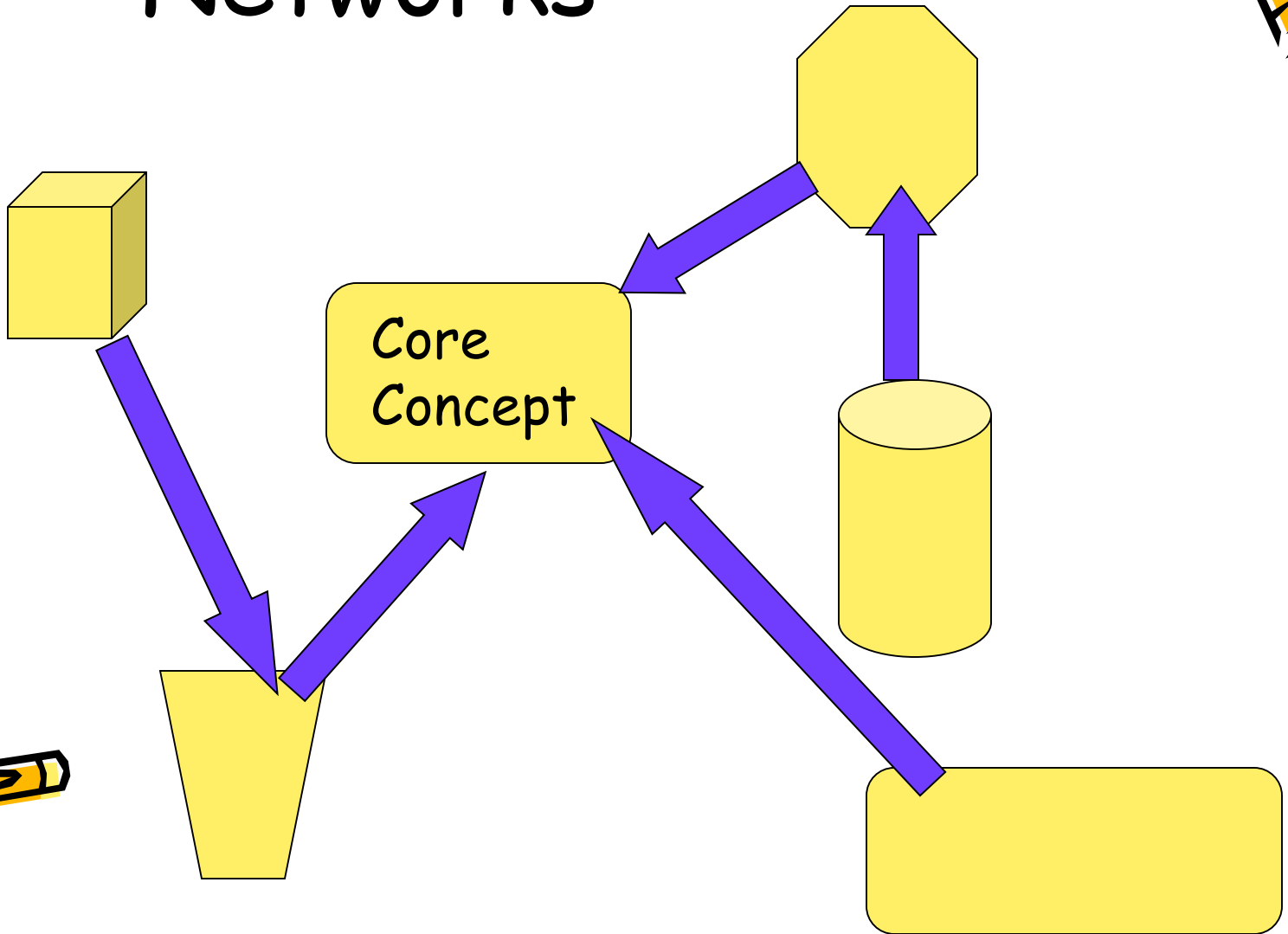


Chaining

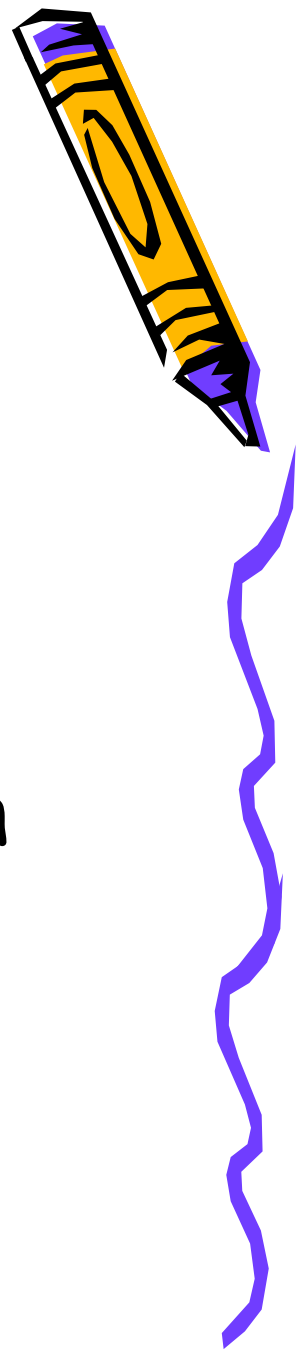
FIGURE 5.4. DIAGRAM TO ILLUSTRATE THE ORGANIZATION OF A SIX-POINT CHAINING LECTURE WITH A SUMMARY AND TWO PERIODS OF TAKING STOCK.



Networks



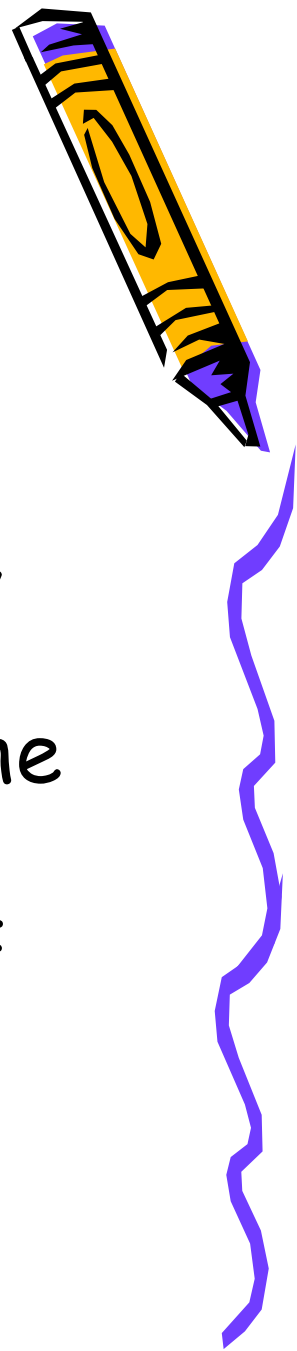
Fundamentals of the Lecture



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Planning Lecture Organization

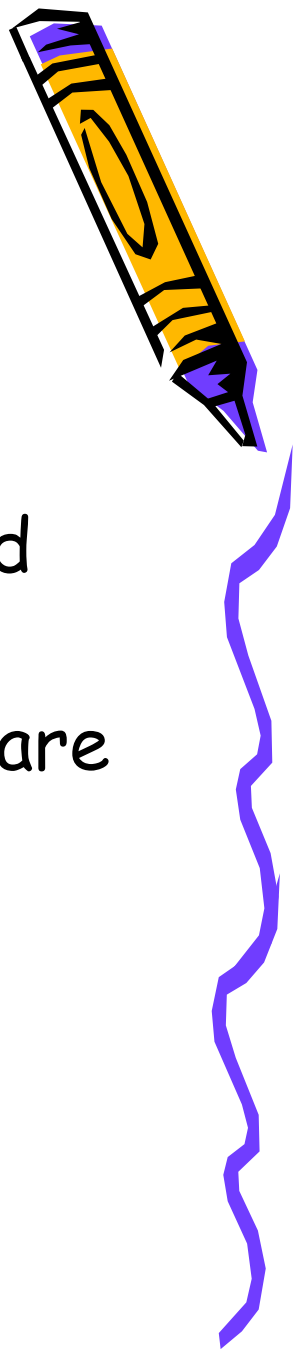


- What are the goals of the lecture, course, program, institution?
- What is the logical structure of the subject matter?
- What is the cognitive structure of students' minds (currently)?



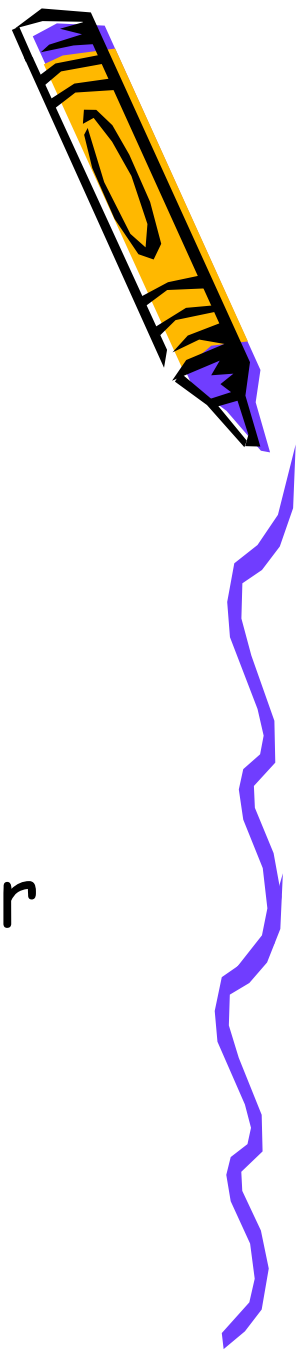
Planning

- What are the most difficult concepts?
- What are the most diverse or scattered concepts?
- What relationships within the material are more subtle than others?
- What framework is needed for future learning?

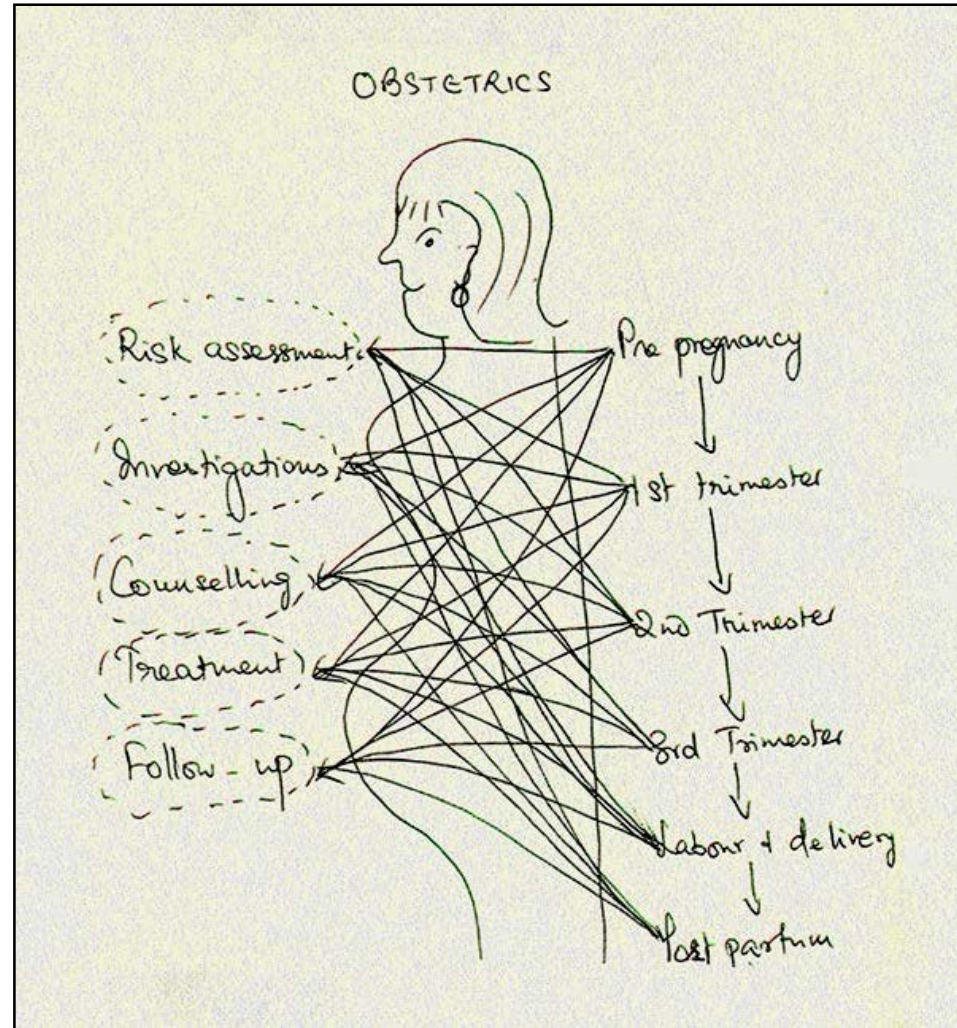


Planning

- What do I really want students to remember from this lecture...next week.. next year?
- What in my lecture could be better learned by another method?



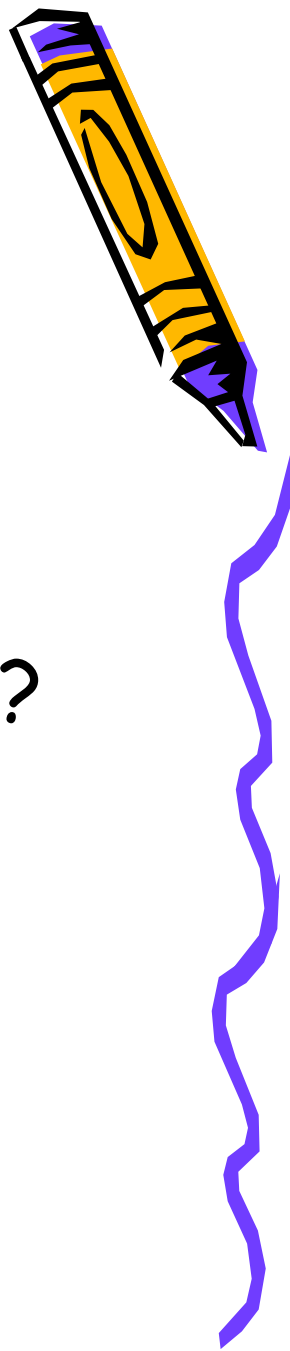
Example



Source: Rethinking Teaching in Higher Education

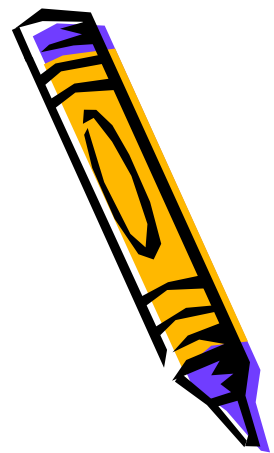
Planning

- What are the 4 - 5 major points?
- How do they fit together?
- How do they link to other material?



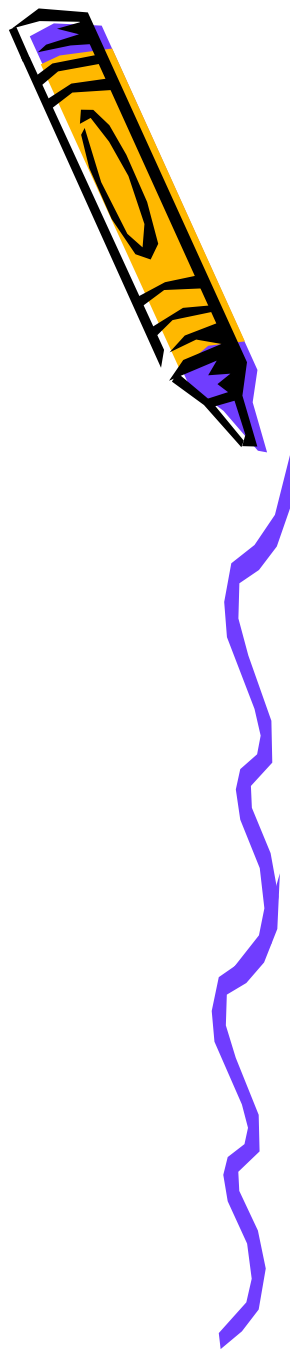
Planning -Logistics

- What room will it be in?
- What will I need? Is the technology ready?
- Will I need to buy/digitize/request/setup anything?
- Can I get the reading, notes, examples, etc to the students ahead of time?
- What notes do I need?



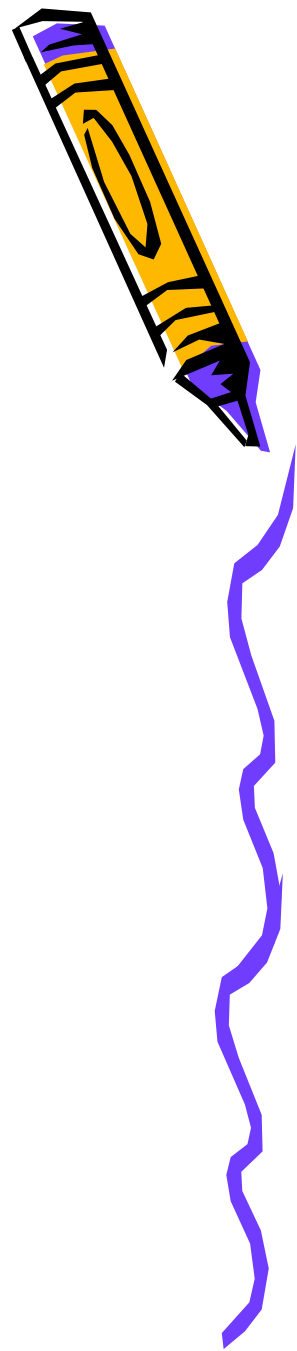
Questions?

- Lecture as teaching method
- Lecture types
- Planning



Lecture Structure

- Introduction
- Body
- Periodic Summaries
- Conclusion

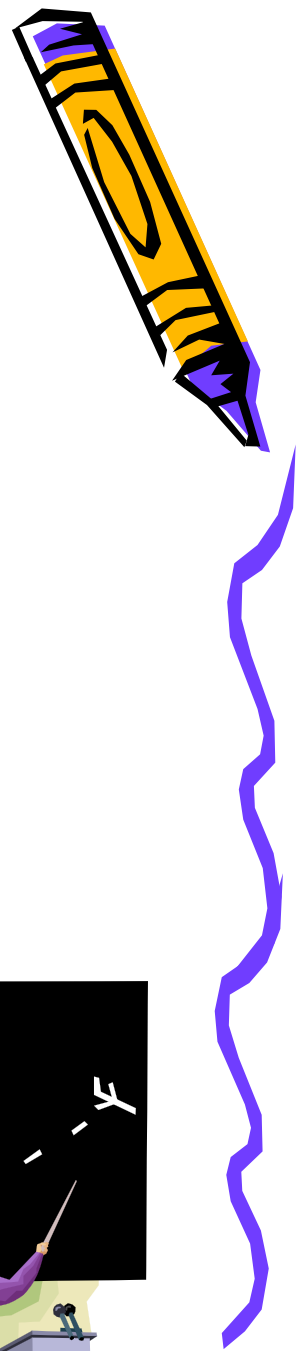


Make it clear!

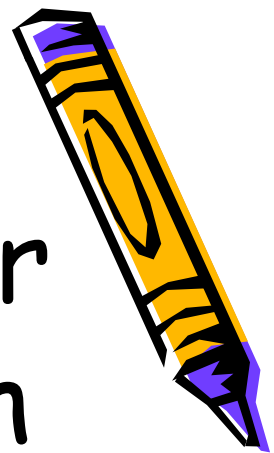


Introduction

- Capture attention
- Point out a gap in students' knowledge
- Raise a question
- Offer a challenge
- Pre-questions
- Example, case, application



The "Anticipatory Set" or The Dead Body Approach



- "Anticipatory Set" credited to
Madeline Hunter

Anticipatory Set Example



Photo courtesy of Dr. Tammy Anderson

Introduction



- Capture attention
- Point out a gap in students' knowledge
- Raise a question
- Offer a challenge
- Prequestions
- Example, case, application

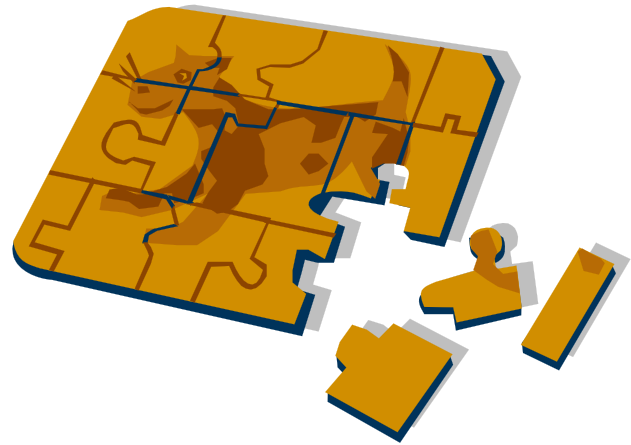
Who Cares??





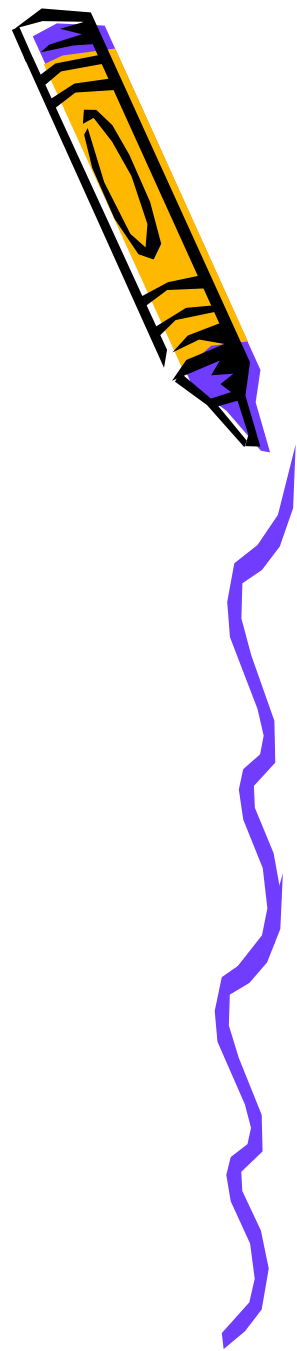
Who Cares - Big Picture?

- Link backward and forward
 - Review from last lecture
 - How does it fit within section, course, curriculum, etc
 - How does it link to concurrent courses

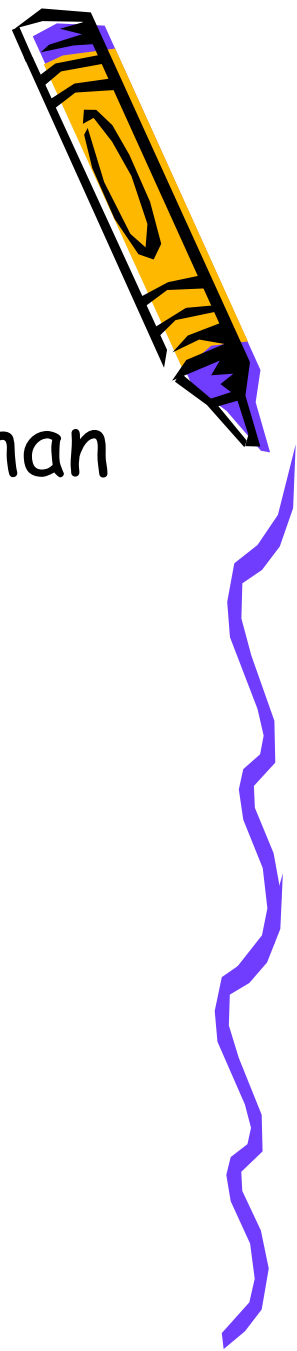


Body

- Highlight a few major ideas or sequences/chunks
- Appropriate use of audiovisual support
- Keep highlighting the overall structure
- Use examples where possible



Some "guidelines" about length

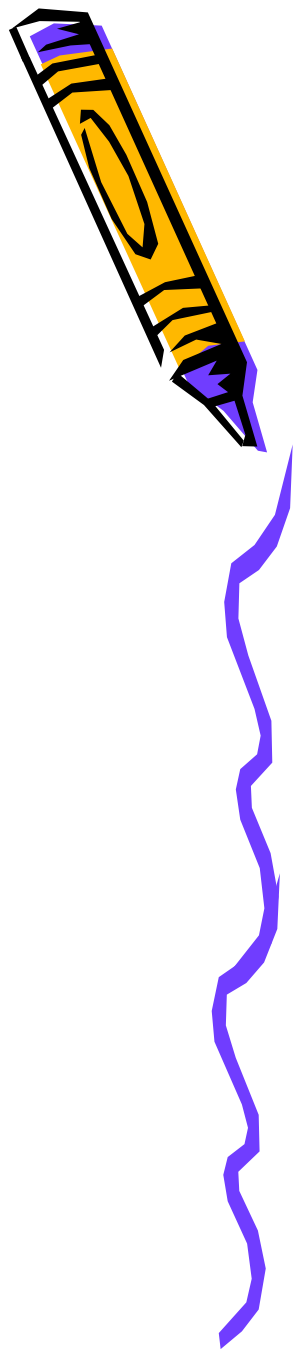


- What you say should be no more than about 5 pages single-spaced text (Joanne Chesley, slideshare.net)
- 1 minute per slide
- 4 to 5 major points or segments

And Remember.....

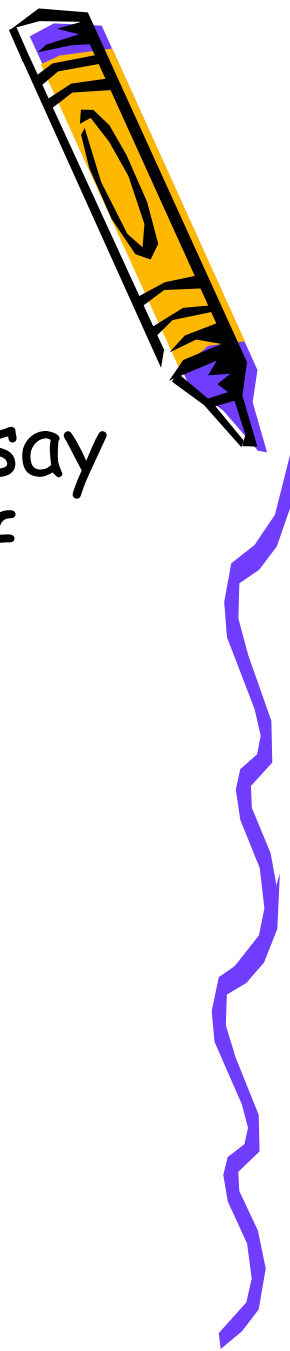


• LESS IS
MORE!!!

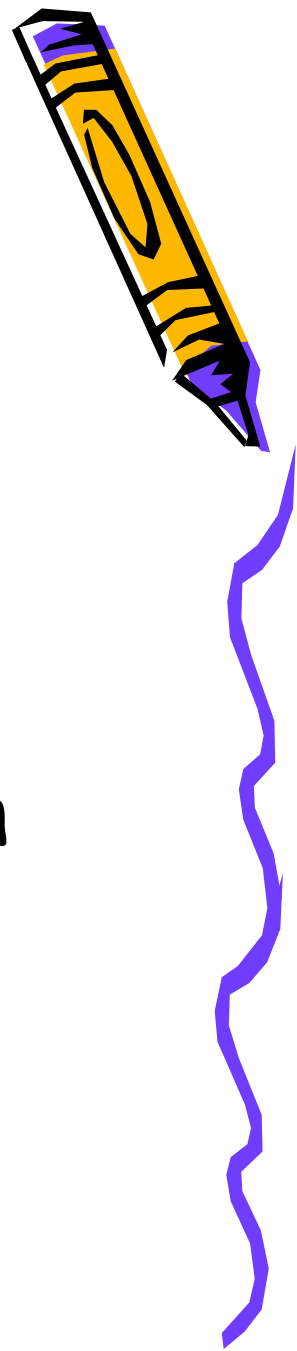


Teach Less Better

- Write out everything you want to say to the students and cut out half of it! (Dennis and Exley, 2009)



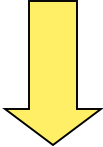
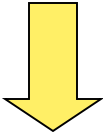
Fundamentals of the Lecture

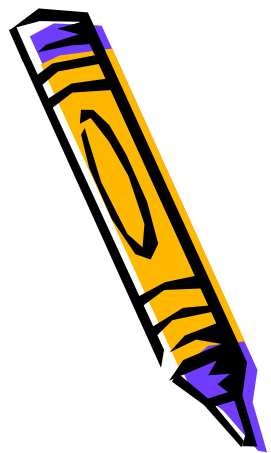


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Making a point effectively

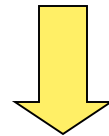
- Rule
- 
- E.g.....
- 
- Rule



Making a point effectively

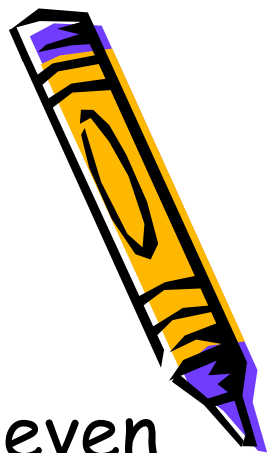


- Concisely state the rule
 - Simple language using 7-8 words
 - One key word
 - Less than 5 seconds (Remember trace decay is quick!!)



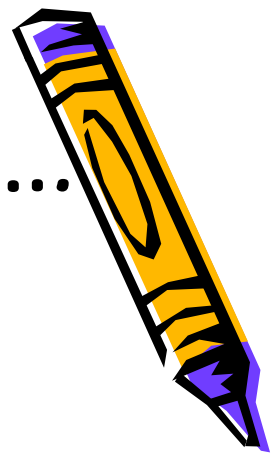
Example

- PRErenal Azotemia is caused by hypoperfusion of the kidneys, so that even if the kidneys are working fine, GFR drops and they don't have a chance to filter the urea and creatinine load.
 - For example, a vomiting dog might get quite dehydrated...
- So, like in this example, PRErenal Azotemia is most often caused by dehydration and decreased renal perfusion.



Making a point effectively... what's the e.g....?

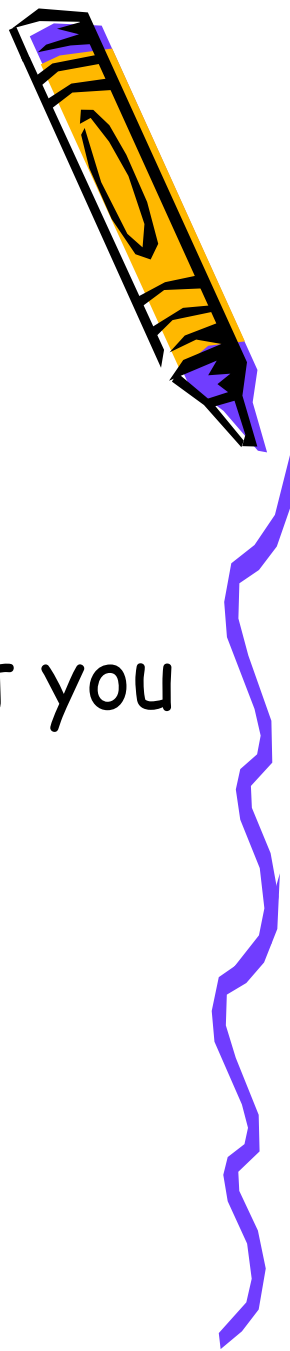
- Display
 - Word, statement on screen
- Reexpress
 - Say it another way
- Elaborate
 - Illustrate
 - Explain
 - Detail
 - Analogies
 - Relate
 - Example



Making a point effectively... rule!

- State simply
- Give example
- Restate (Use the same statement you started with)

And...

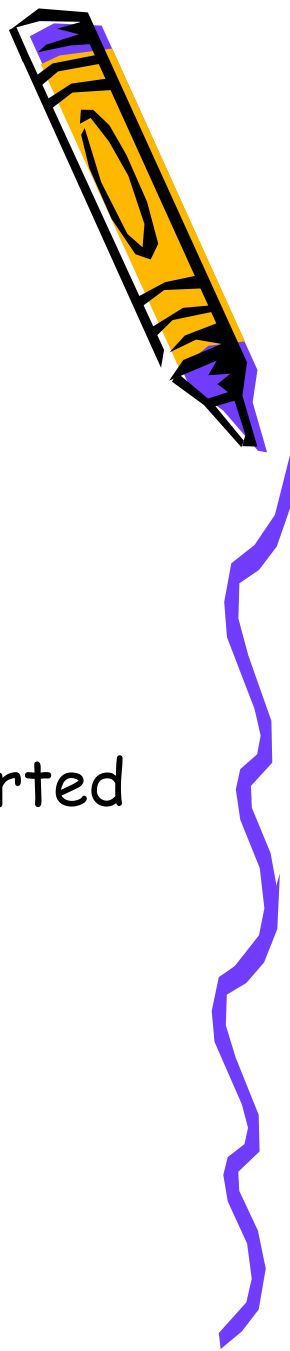


Making a point effectively... rule!

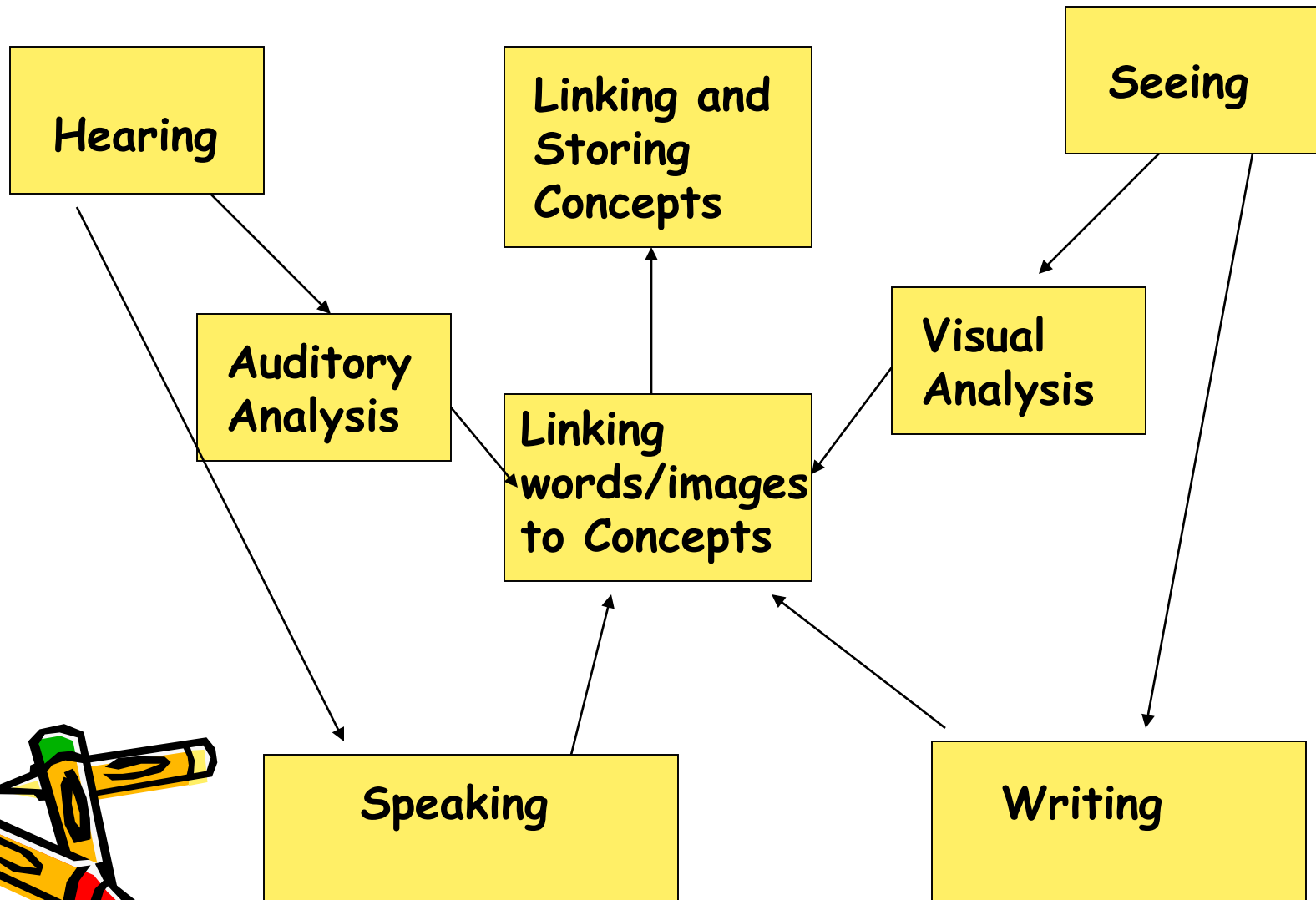
- Rule or Concept
 - State simply
 - Give example
 - Recapitulate
 - Restate (Use the same statement you started with)

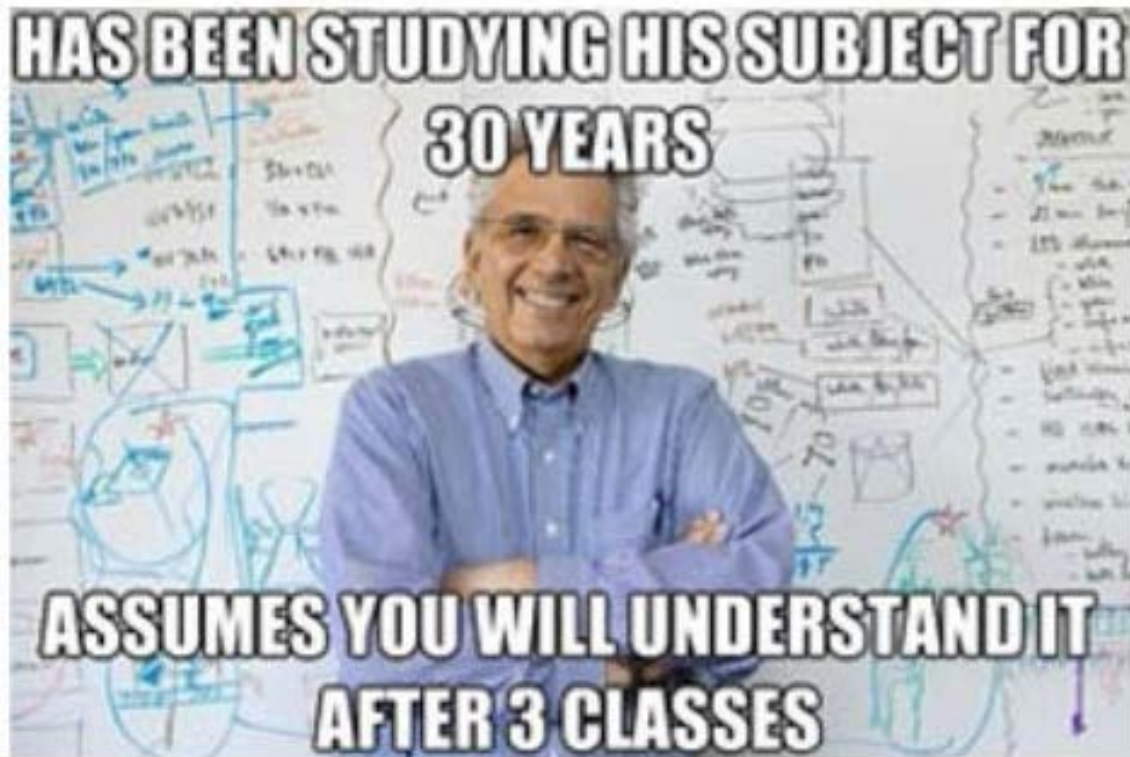
And...

Pause!



What happens?

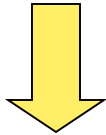




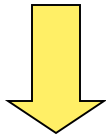
Found at <http://greatbritishmag.co.uk/lifestyle/the-rise-of-university-memes>

Making a More Difficult Point

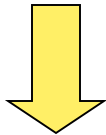
- E.g.



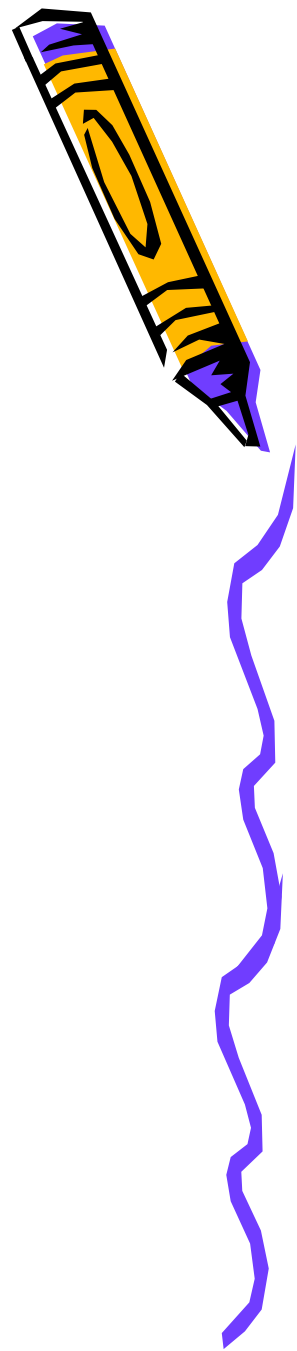
- Rule



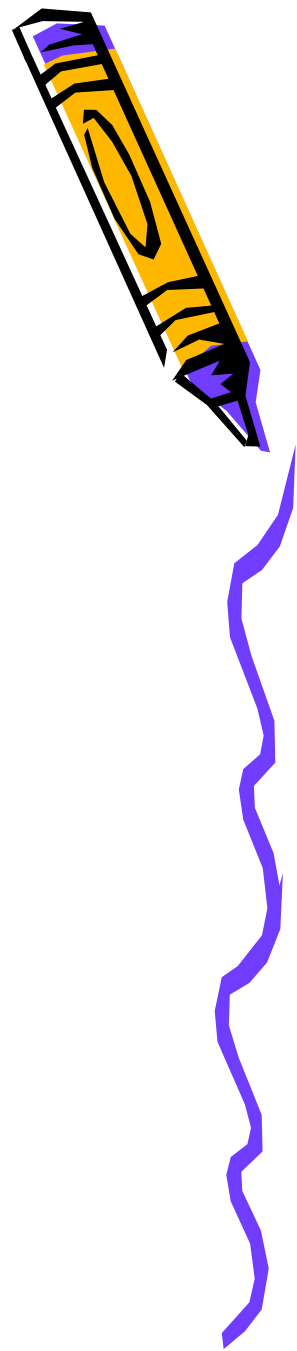
- Rule



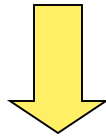
- E.g



Making a More Difficult Point

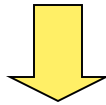


- E.g.



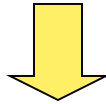
- » Example(s)
- » Reasoned interpretations
- » Observation*

- Rule



- » Concise statement/display

- Rule



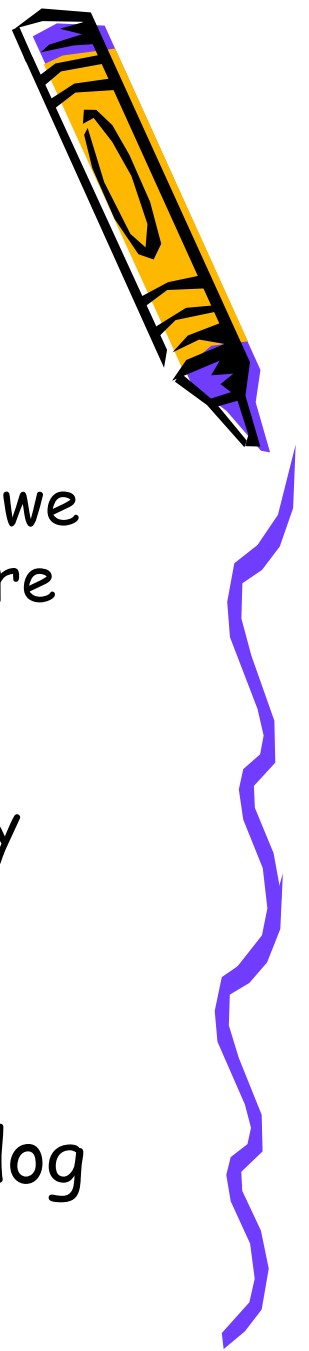
- » Rexpression

- E.g

- » New example
- » Recapitulate, restate



Example



- How can protein get in the urine...
 - Proteinuria can come from preglomerular, glomerular and postglomerular sources and we always rule out postglomerular causes before pursuing primary glomerular disease.
 - In other words, if a dog with persistent proteinuria doesn't have evidence of urinary tract hemorrhage or inflammation, then we start worrying about glomerular leakage of proteins from a few potential pathologies.
- For example, this is some data from a dog with heartworm disease...

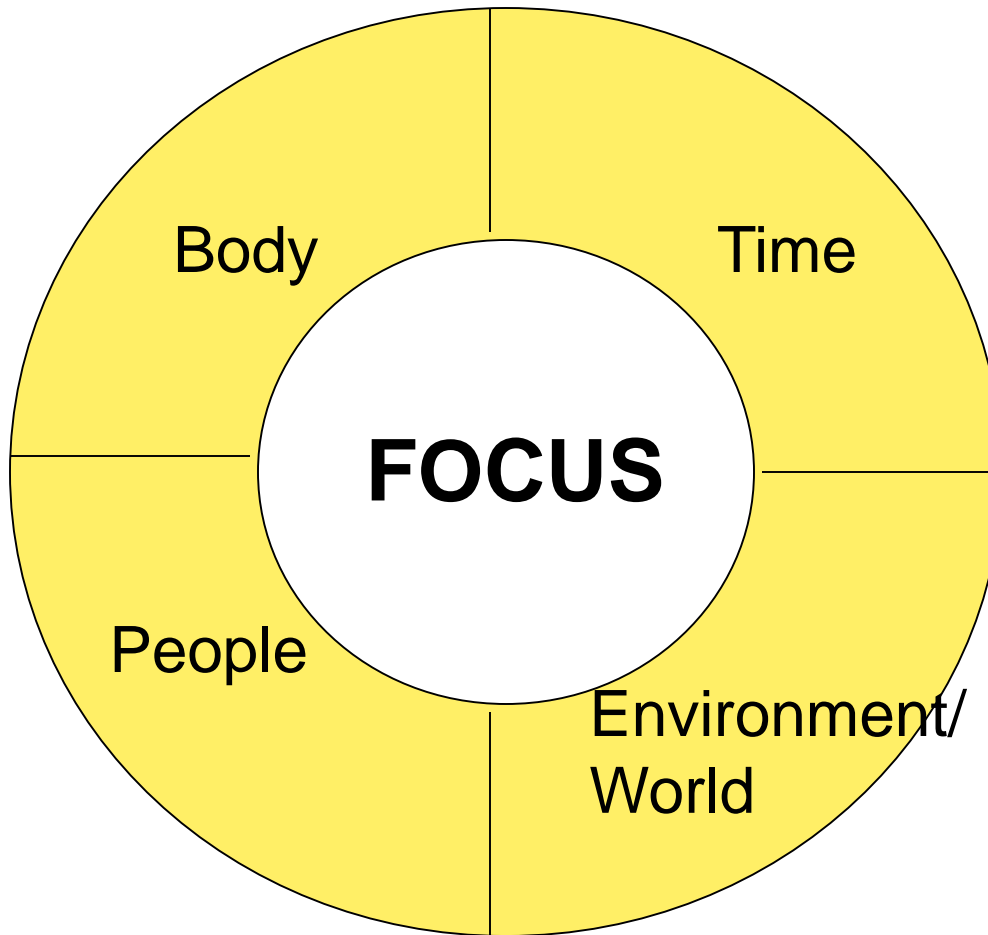


Maintaining Attention

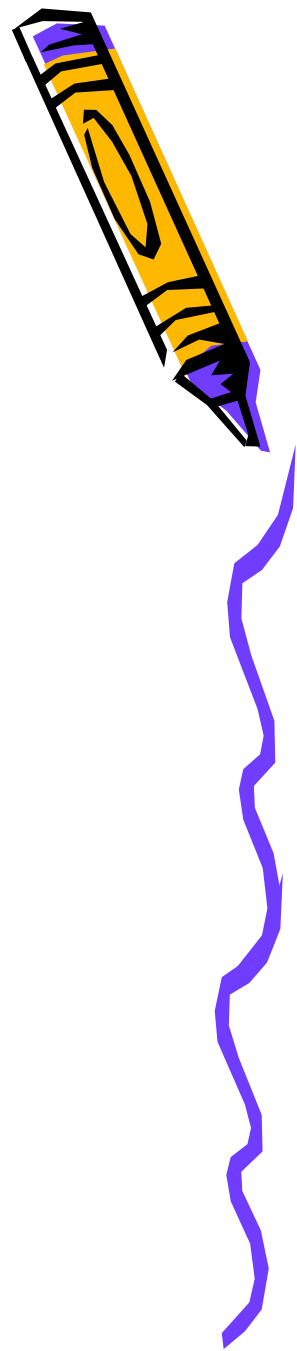


is0266n3b fotosearch.com

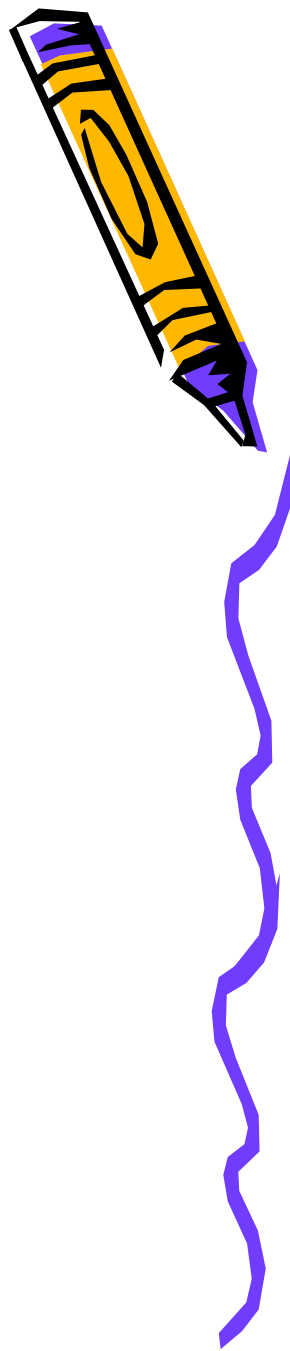




Pollio et al, UT



Students' Heart Rate Data - Uninterrupted Lecture



IN A TRADITIONAL CLASSROOM...

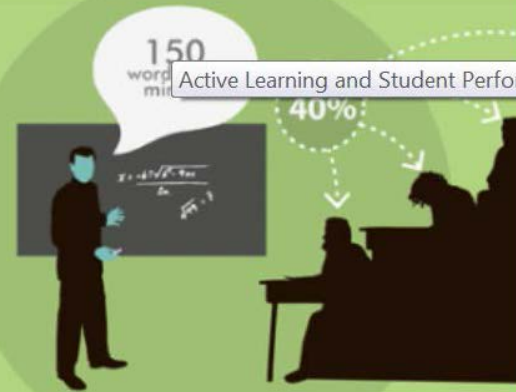
CLASSROOM



Instructor generally says about 150 words per minute

Students usually hear only about half (50 percent)

LECTURE



in a typical lecture class, students are attentive just 40 percent of the time

FIRST 10 MINS OF CLASS 70% RETENTION



One study concluded that students retain about 70 percent of what they hear in the first ten minutes of class—and just 20 percent during the last ten minutes. Adding visual aids increased retention by 14-38 percent.

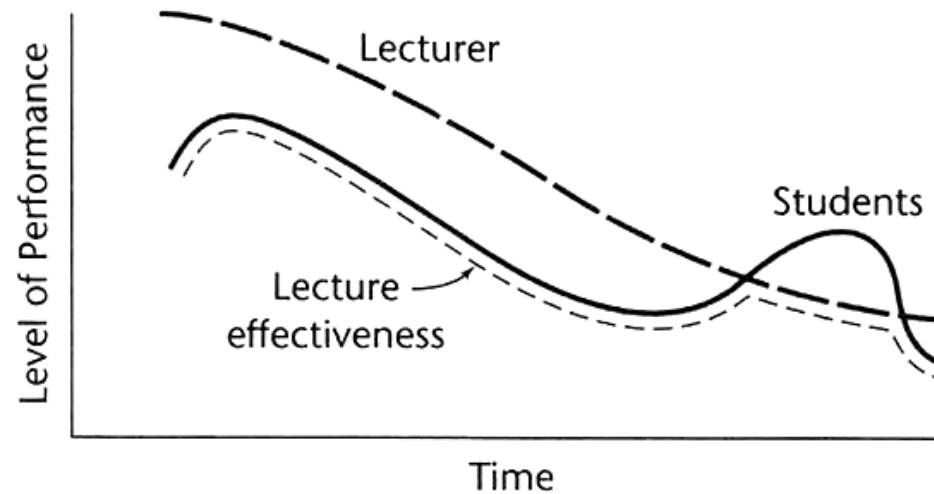
LAST 10 MINS OF CLASS 20% RETENTION



From Falcon Products as viewed at <http://elearninginfographics.com/active-learning-and-student-performance-infographic/>

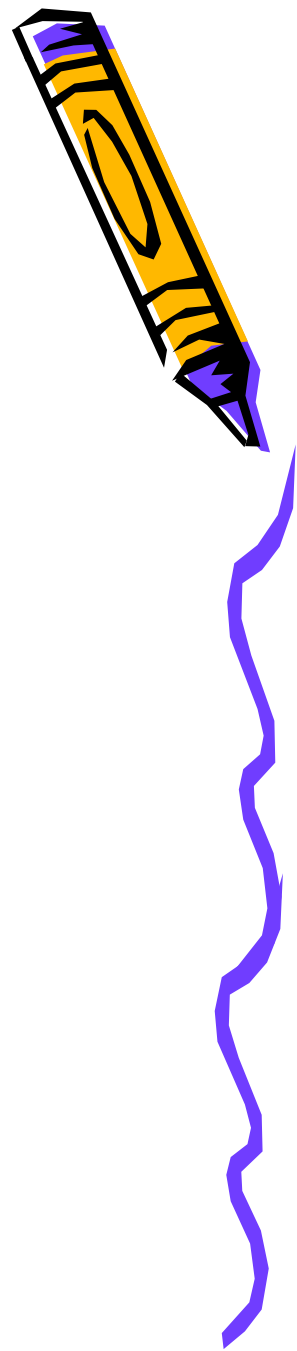
Lecture Attention

FIGURE 3.4. LEVEL OF PERFORMANCE DURING A LECTURE.



Source: Adapted from Lloyd (1968).

Shall I tap dance?



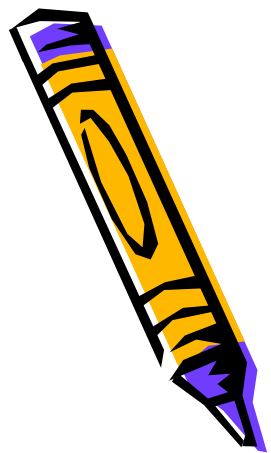
Gaining attention

- Variation
 - Intensity
 - Pace
 - Expression
 - Surprises

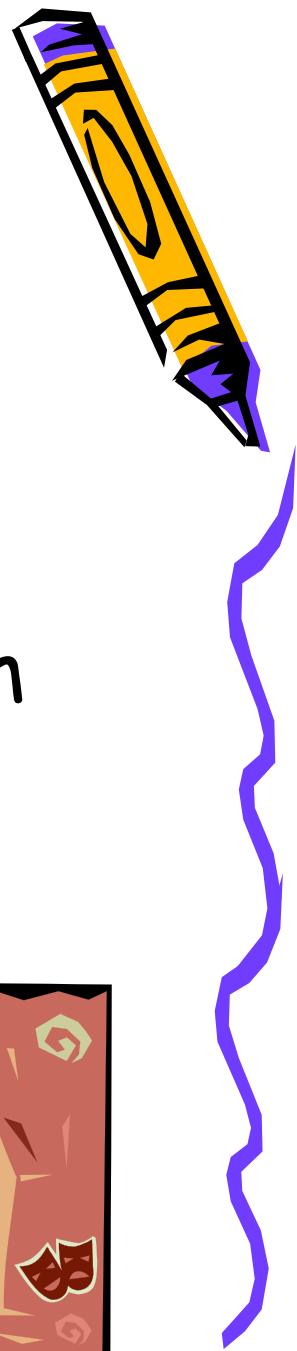


Gaining attention

- Visual cues
 - Gestures
 - Movement
 - Eye contact/facial expression
- Demonstrations, cases, activities, questions
- Stories
- Use a lot of examples
- PAUSES!



Isn't this just entertainment?



- The brain tends to remember surprises!
- We are wired to react and problem solve in novel and unexpected situations to survive



Videos and Drawings

- <http://www.youtube.com/watch?v=KWHasxDRf54><http://www.youtube.com/watch?v=KWHasxDRf54>

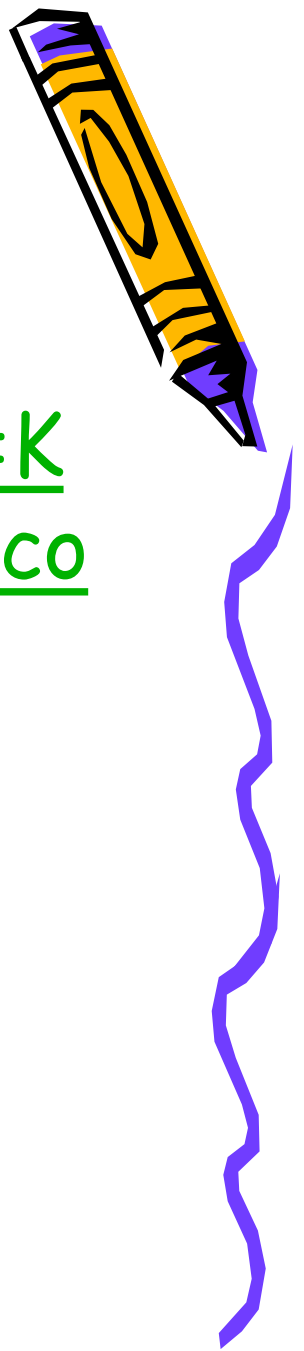
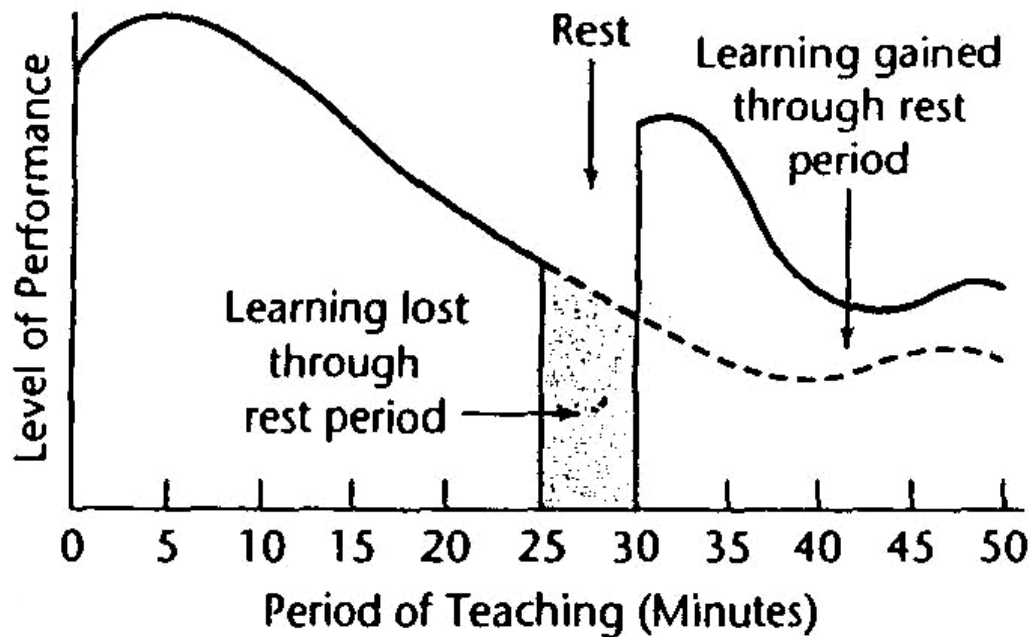
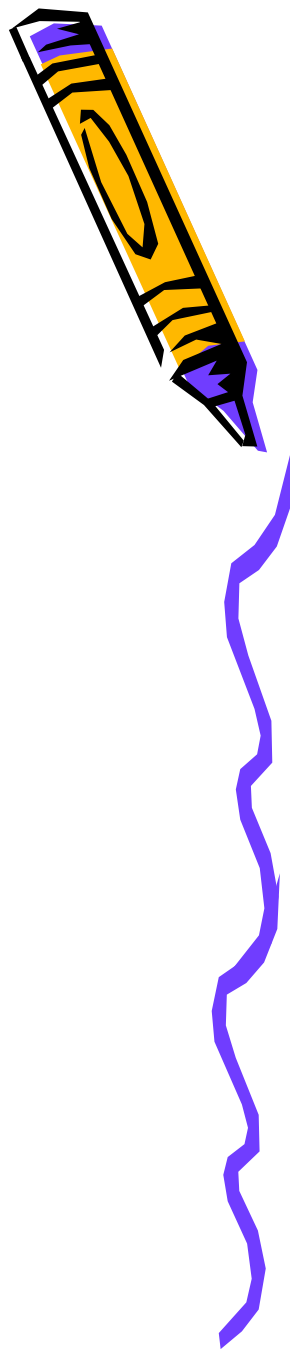


FIGURE 3.7. HYPOTHESIZED PATTERN OF PERFORMANCE DURING A LECTURE WITH A BREAK.



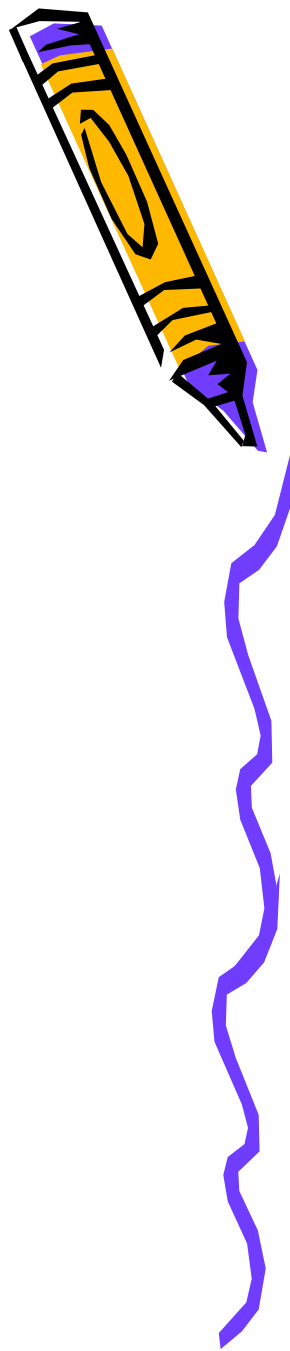
Periodic Summaries

- Offers a chance to catch up
- Offers a chance to check perceptions/misperceptions
- Makes transitions clearer



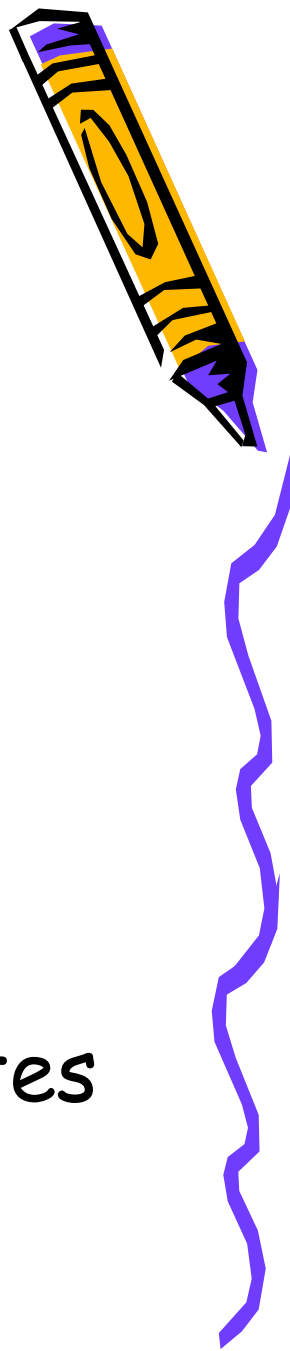
For example...

- Lecture as a teaching method
- Types of Lectures
- Lecture planning
- Lecture structure
 - Introduction
 - Attention spans
 - Periodic summaries

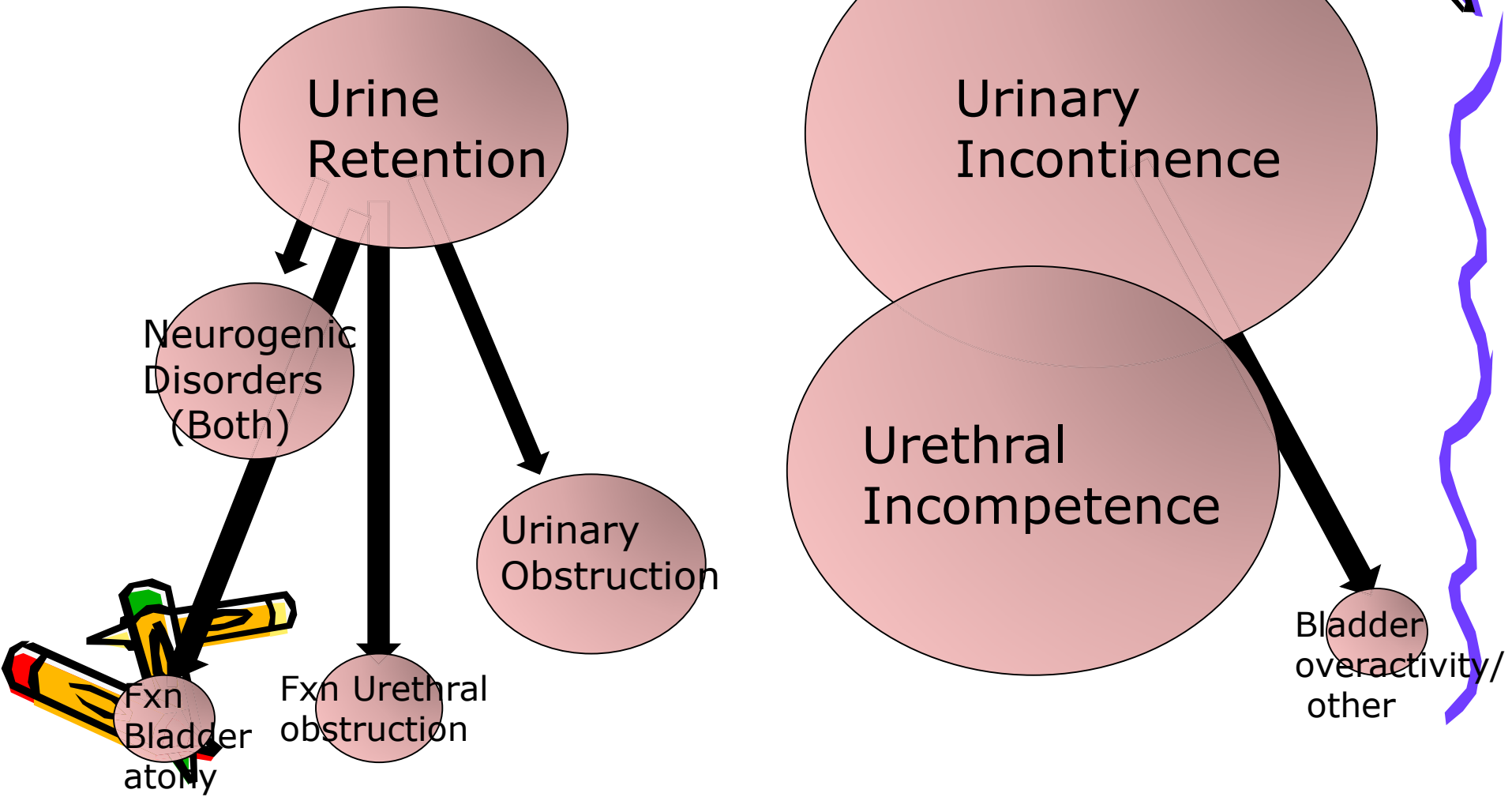


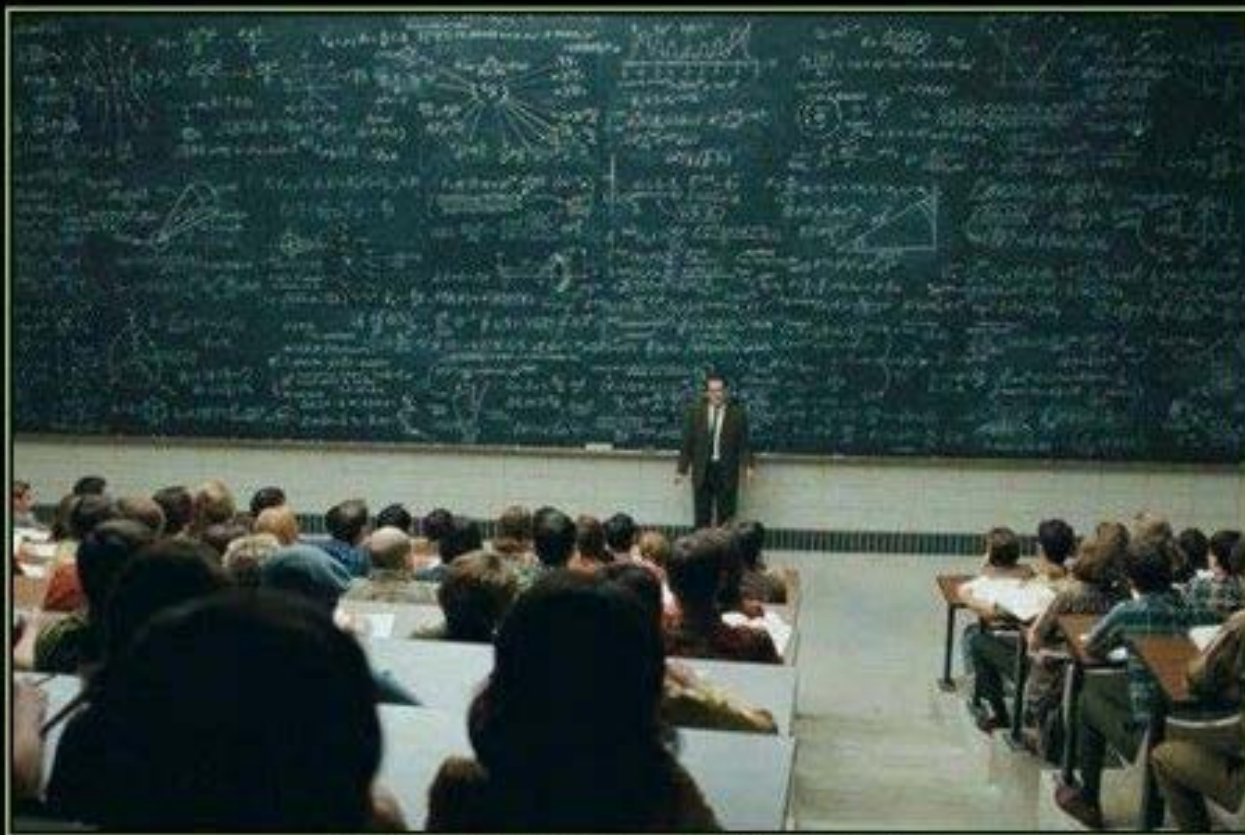
More on Transitions

- Explain the "jump"
- Show a "map"
- Ask for Questions, Pose a clicker question
- Relevant Photo or Visual Cue
- Follow the organization of the notes



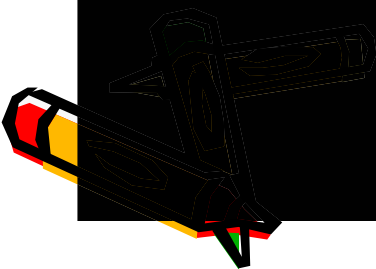
Common Micturition Disorders





WOMEN

the simple explanation



Repetition is Good... but Don't overdo it!



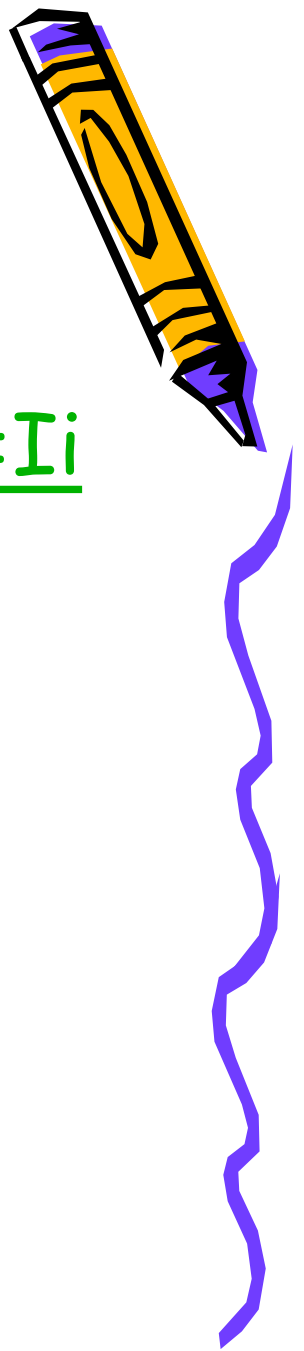
Concluding the lecture

- Recapitulate major points
- Encourage students to formulate questions
- Review organization of the lecture
- Ask a student(s) to summarize the lecture
- Propose unanswered questions for next time or for independent work



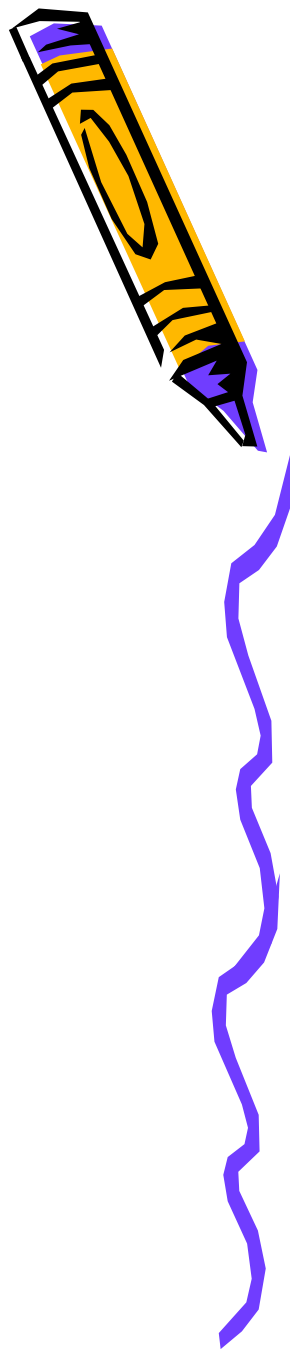
Go back to your "hook"

- <http://www.youtube.com/watch?v=IiYUzYozsAQ>



Getting feedback

- Watch the students
- Ask questions
- Use classroom assessments



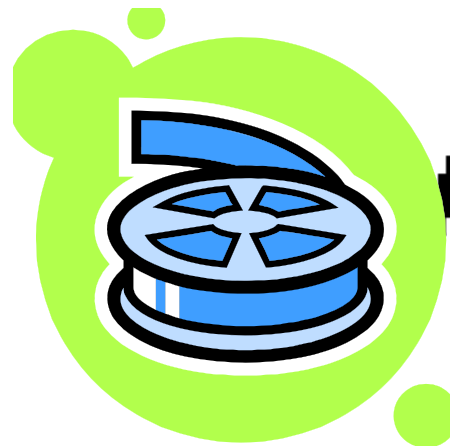
Getting feedback

- Watch the students
 - Not necessarily the top students
- Ask questions
 - Not necessarily to the ones who answer every time

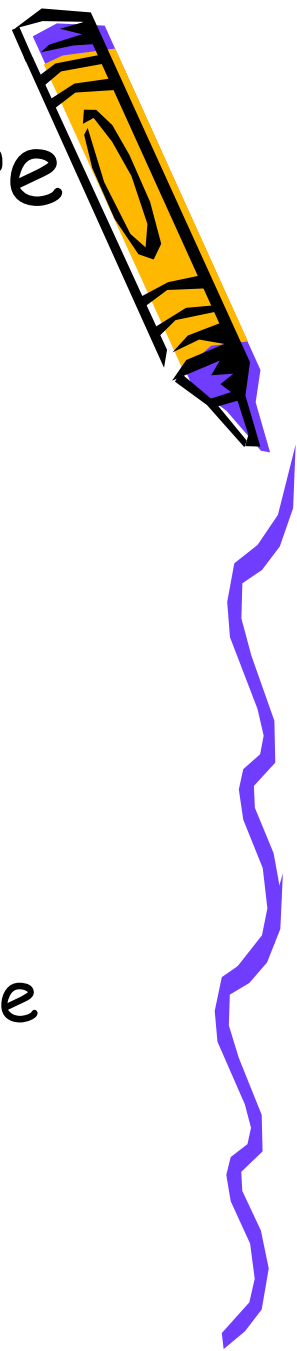


Getting feedback

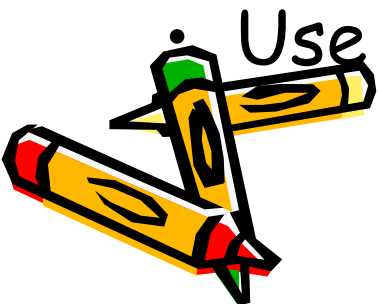
- Audience Evaluations
- Peer evaluation
- Videotape Review
- Voice or Speech Training
- Focus on a few goals



Fundamentals of the Lecture Summary

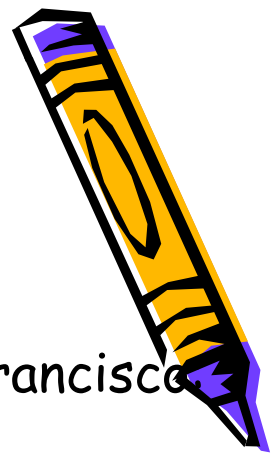


- Use lecture format when appropriate
- Plan what to cover and the best structure/format
- Use an Introduction, Body, Periodic Summaries, Conclusion
- Convey the structure to be used
- Keep refreshing the structure as you introduce new points/make links or make transitions
- Use lots of examples and pauses!



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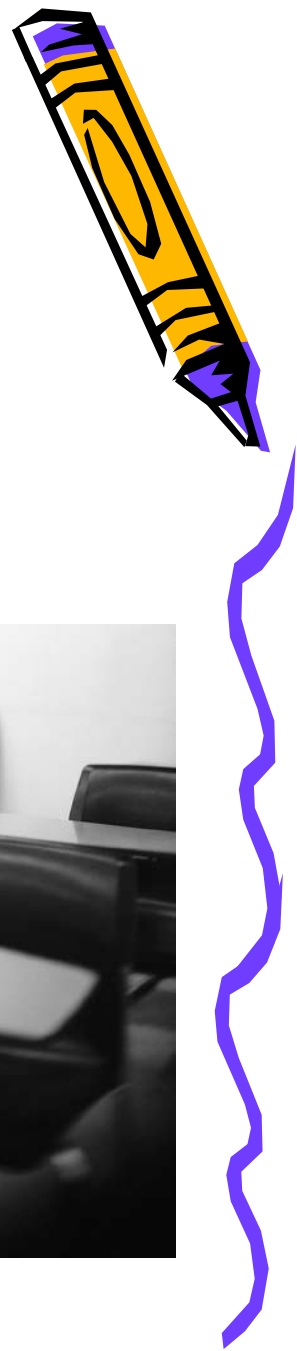


Does it work?

- Comparison of short lectures given to Nurse Practitioners on anticholinesterase inhibitors



Gwee et al, IAMSE, 2006



Does it work?

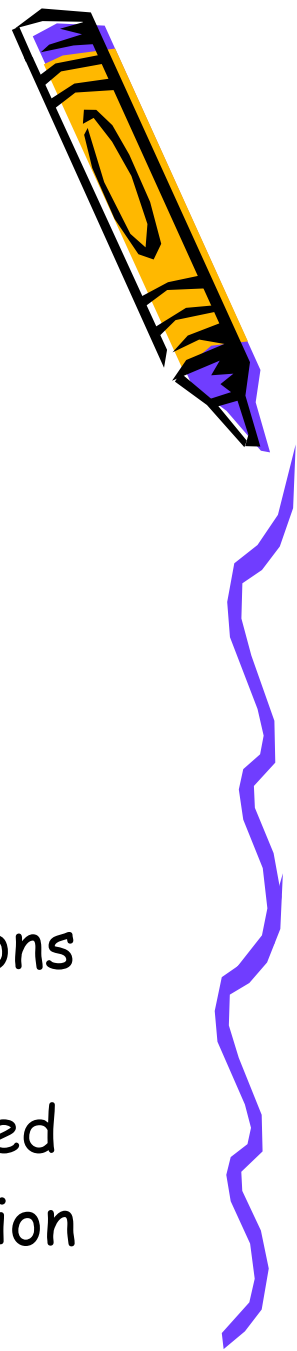
Lecture X

- Traditional factual delivery



Lecture Y

- Statement of objectives
- Dramatic episode
- Review
- Interactive Questions
- Humor
- Sequenced, organized
- Focused on application



Does it work?

Final Ratings



Lecture X

- Traditional factual delivery

1.7 - 3.1

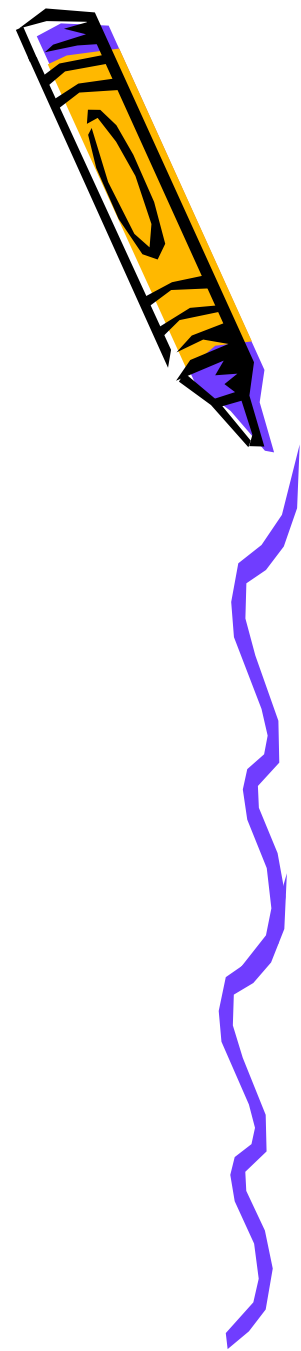
Lecture Y

- Statement of objectives
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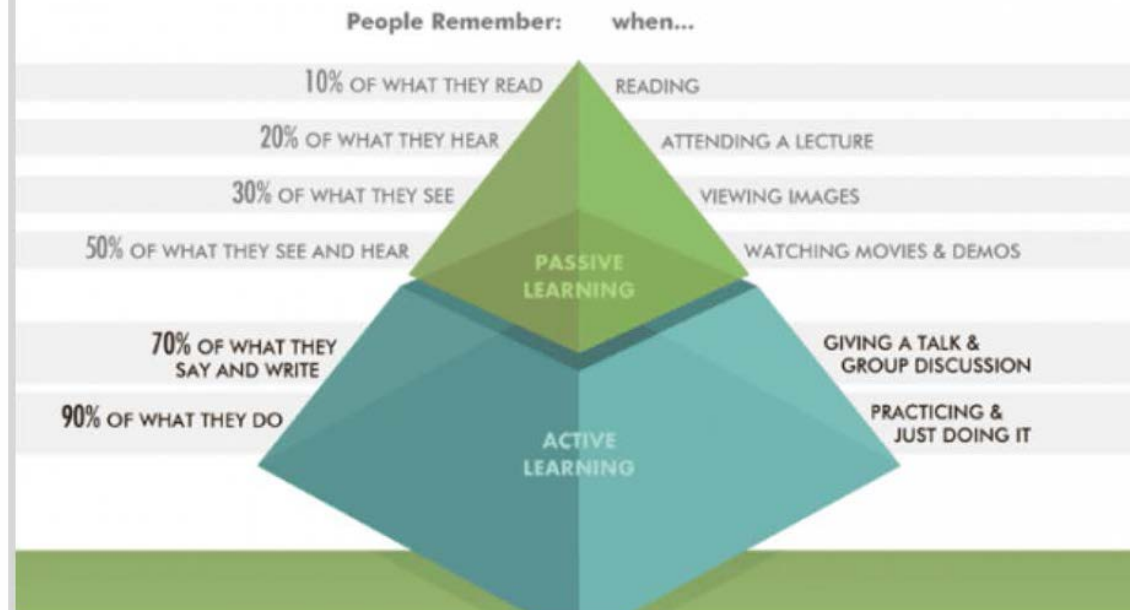
3.9 - 4.5



Good Luck!



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