Purpose of Active Learning

- Linking new knowledge to existing knowledge
- Finding patterns and organizing these patterns into a meaningful idea
- To DO something!
  - “discovering, processing, and applying information
  - learning is by nature an active endeavor and
  - different people learn in different ways" (Meyers and Jones, 1993).

- “talking and listening, writing, reading, and reflecting (Meyers and Jones, 1993)

- higher-order thinking (analysis, synthesis, evaluation),
- engaged in activities (e.g., reading discussing, writing),
- exploration of own attitudes and values” (Bonwell and Eison (1991) p. 2).
Active Learning Theory

- 98% of all new learning into the brain comes through the senses (Tileston, D.W., 2007, p.7)
- Multiple intelligences (Gardner): verbal/linguistic, logical/mathematic, visual/spatial, bodily/kinesthetic, musical/rhythmic, interpersonal/intrapersonal/emotional, naturalistic
- Hands-on
- Sequencing
- Reflection/meaning-making
- Transfer of knowledge/critical thinking
Passive vs. Active learning...

People generally remember... (learning activities)

- 10% of what they read
- 20% of what they hear
- 30% of what they see
- 50% of what they see and hear
- 70% of what they say and write
- 90% of what they do.

Passive Learning

Active Learning

People are able to... (learning outcomes)

- Define
- Describe
- Explain
- Demonstrate
- Apply
- Practice

Analyze
- Define
- Create
- Evaluate

www.edutechie.ws/.../cone-of-experience-media/
Re-reading your textbook is not a good use of your time
  – False sense of confidence of your knowledge

Need to DO something with the info
  – Give a lecture (to yourself or a study group) over the material
  – Create your own study guide
  – Re-type your notes—where you give yourself a concept, and come up with the definition, and how it relates to other concepts—in your own words

Actually DO something active while engaging with the material (example: plan a paper while going for a walk
• Form a study group
  – Most of us learn better when we talk through what we know
  – Best way to learn something: teach it
  – Who should we ask to be in a study group?
Self-regulated learning

- Where you analyze old tests, quizzes, and assignments to find patterns in where you go wrong—and then FIX it
- Rework the problems you’ve gotten wrong

Works well for Math & Science courses
<table>
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<tr>
<th>What do I <em>KNOW?</em></th>
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• Article/Text
  • Predictions (Chapter, Title, Pictures, Diagrams)
  • Paraphrase/Insight (Subheadings)
  • Explain (Contradict, Clarify, Add to, Repeat?)
  • Can you make a rhyme? Can you draw a picture? Can you tell a story about a friend?
• Post-It Notes
• Brainstorm
• Linear and Random both OK!
Strategies: Active Study

• Avoid **Technology Burnout**

• Use less technology during stressful times

• Prefrontal Cortex: area of brain responsible for learning
  
  – Dual Task Interference: our cognitive capacity drops significantly when we perform two cognitive tasks at once

  • Facebooking while writing a paper, for example
• Technology Burnout
• Leads to increased stress hormones in our bodies
  – Example—Google search
    • Constant *partial attention* paid to any one piece of information because of the scanning we do over the text and the periphery information of the ads on the sidebar
Avoiding Technology burnout

• Work to reduce the speed and quantity of info flowing through your brain during this stressful time
  – If it is a major problem for you, consider deactivating your FB or other social network accounts
    • If not, limit yourself to 30 minutes/day on FB as a break or reward
  – Write your ideas down—pen and paper
  – Mindfulness—take one task at a time
  – Exercise
  – Watch less TV, read less on the internet
Summary and Review

- Meaning-making
- Collaborative (Think-Pair-Share)
- Multiple Intelligences
- Relevance
- Stop. Think. Summarize.
- Move around (blood flow, oxygen, brain rest)
- Tech Burnout
References

• http://www.cat.ilstu.edu/additional/tips/newActive.php
• http://www.teachingcommons.ca/node/67
• http://www.scribd.com/doc/432213/Active-Learning-Strategies-Handout