

Learning Styles and Teaching Students *How to Learn*

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LOUISIANA STATE UNIVERSITY
Center for Academic Success
UNIVERSITY COLLEGE

2004-2005 National College Learning Center Association
Frank L. Christ Outstanding Learning Center Award



The Story of Five LSU Students

- Travis, junior psychology student
47, 52, 82, 86
- Robert, freshman chemistry student
42, 100, 100, 100
- Miriam, freshman calculus student
37.5, 83, 93
- Maryam, freshman art student
57, 87
- Terrence, junior Bio Engineering student
GPA 1.67 cum, 3.54 (F 03), 3.8 (S 04)

Desired outcomes

- We will understand how learning styles can be used to increase student learning
- We will understand some basic principles of cognitive science that can be used to improve teaching and learning
- We will have concrete strategies that faculty can teach students to increase critical thinking
- We will see how to influence faculty on our campuses to adopt strategies to increase student learning

Overview

- Characteristics of Today's Students
- Learning Style Fundamentals
- The Importance of Learning Styles to Student Learning
- Cognitive Science Applications
- Learning Strategies that Work
- Wrap Up Activity

Reflection Questions

What is the difference, if any, between studying and learning?

Which, if either, is more enjoyable?

When did you learn the conceptual structure (relationships between basic concepts) of your discipline?

When/why/how did you learn this?

Characteristics of Many of Today's Students

- Working more hours
- More ADD/ADHD
- Interested in obtaining credentials
- Feel entitled to an A or B if they consistently attend class
- Few time management skills
- Few learning skills



Counting Vowels in 30 seconds

How accurate are you?

Why don't students know how to learn or how to study?

- It wasn't necessary in high school
 - 66% of 2003 entering first year students spent less than six hours per week doing homework in 12th grade.
 - More than 46% of these students said they graduated from high school with an "A" average.
- Students' confidence level is high
 - 70% believe their academic ability is above average or in the highest 10 percent among people their age

Higher Education Research Institute Study
http://www.gseis.ucla.edu/heri/03_press_release.pdf

Turn Students into Expert Learners:

**Learning Styles and
Learning Strategies are the Keys!**

What IS an Expert Learner?

Expert learners:

- Actively engage with the material
- Take responsibility for their own learning
- Motivate themselves and guide their own learning
- Know HOW to learn
- Attribute failures to correctable causes and success to personal competence
- Use learning strategies selectively and strategically, based on their learning style

<http://vcs.ccc.cccd.edu/crs/star/educ120/intro2EI.htm>

**Learning Strategies
Should be Based on
Learning Style**

Learning Styles

- Influence how we take in information from the outside world
- Influence how we process information
- Influence how we interact with others
- Influence our motivation for learning different subjects
- Influence our frustration level with learning tasks

Learning Style Diagnostics

<http://www.cas.lsu.edu>

- **Brain Dominance**
- **Personality**
- **Sensory Preference**

Brain Dominance

- **Left Brain vs. Right Brain**
 - Right Brain: visual, intuitive, holistic, abstract, spatial and main ideas;
use charts, maps, time lines, graphs, or visualization as study tools
 - Left Brain: verbal, logical, linear, concrete, time oriented, and details;
use outlines, lecture notes, or the Cornell note taking format as study tools
 - Some students will be “balanced”

Personality Profile

E xtrovert	I ntrovert
S ensing	i Ntuitive
T hinking	F eeling
J udging	P erceiving

Modified Myers-Briggs

Sensory Preference

- Visual: prefers pictures, symbols, charts, graphs, concept maps, etc.
- Aural or auditory: prefers hearing lectures, reading notes out loud, etc.
- Read/write: prefers flashcards, notes, lists, outlines, etc.
- Kinesthetic: prefers direct experience, mapping, charting, experiments, visualizing action, etc.

What's YOUR Style?

- Left or right brain dominant?
- Personality Type
 - Extrovert or Introvert?
 - Sensing or Intuitive?
 - Thinking or Feeling?
 - Judging or Perceiving?
- Modality (Sensory Preference)?
 - Visual, Aural, Read/Write Kinesthetic

Cognitive Science: The Science of the Mind

Questions

- How do humans process information?
- How do people increase their knowledge?
- What factors influence learning?
- What types of learning facilitate transfer of information learned to new settings?
- How can we change teaching to improve learning?

What we know about learning

- Active learning is more lasting than passive learning
- Thinking about thinking is important
 - Metacognition
- The level at which learning occurs is important
 - Bloom's Taxonomy

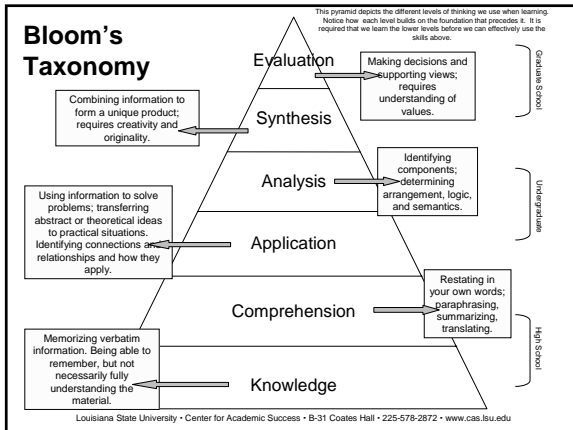
Metacognition

The ability to:

- think about thinking
- be consciously aware of oneself as a problem solver
- monitor and control one's mental processing (e.g. "Am I understanding this material?")
- accurately judge one's level of learning

Effective Metacognitive Strategies

- Always ask why, how, and what if
- Use SQ5R for reading assignments
(survey, question, read, recite, review, wRite, reflect)
- Test understanding by giving “mini lectures” on concepts
- Move higher on Bloom’s taxonomy
- Always solve problems without looking at an example or the solution
- Use the Study Cycle with Intense Study Sessions



Example ~ Bloom's Levels of Learning ~

Applied to Goldilocks and the Three Bears

Evaluation	Judge whether Goldilocks was good or bad. Defend your opinion.
Synthesis	Propose how the story would be different if it were Goldilocks and the Three Fish.
Analysis	Compare this story to reality. What events could not really happen.
Application	Demonstrate what Goldilocks would use if she came to your house.
Comprehension	Explain why Goldilocks liked Baby Bear's chair the best.
Knowledge	List the items used by Goldilocks while she was in the Bears' house.

Courtesy of http://www.kyrene.k12.az.us/schools/brisas/canda/ftpack/BloomsCriticalThinking_files/v3_document.htm

The Study Cycle

Phase 1: Preview chapter(s) to be covered in class... before class.

Phase 2: **GO TO CLASS!** Listen actively, take notes, participate in class.

Phase 3: Review and process class notes as soon after class as possible.

Phase 4: Implement Intense Study Sessions.

Repeat

Intense Study Sessions



- 2-5 minutes: **Set Goals**
- 20-50 minutes: **STUDY with FOCUS and ACTION**
(Read your text, create flash cards, create maps and/or outlines, work problems -without peeking at the answers, quiz yourself...)
Achieve your goal!
- 5 minutes: **Take a break**
- 5 minutes: **Review** what you have just studied
- Repeat

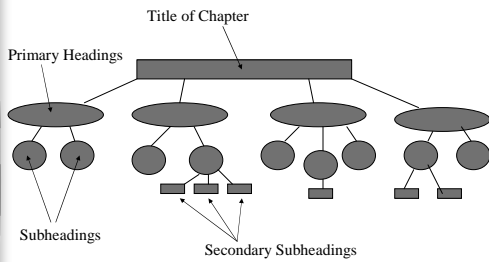
**Concept maps
facilitate development
of higher order thinking skills**



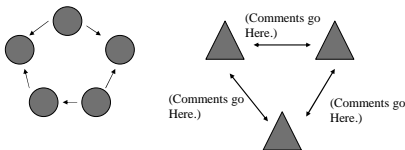
Concepts Maps

Can Have Many Forms

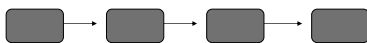
Chapter Map



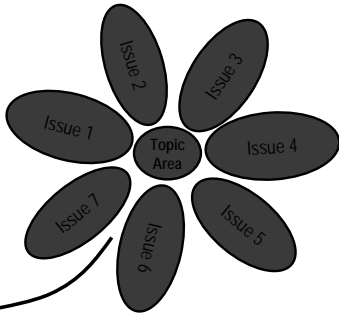
Ideas...



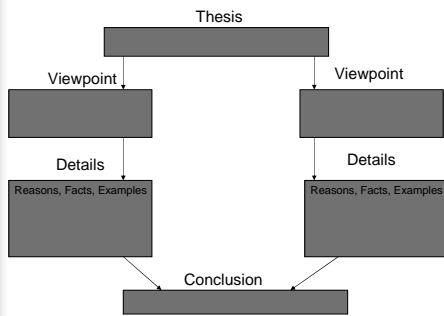
Cause and Effect:



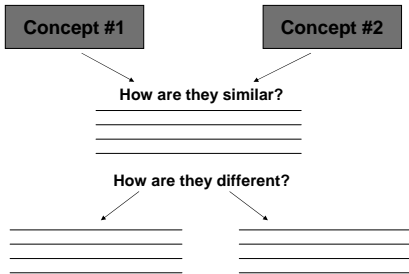
Get Creative!



Persuasive Writing



Compare and Contrast



Wrap Up Activity:

Using Learning Styles and Cognitive Science Information in Our Teaching

- Select a course you are teaching (or have taught, or may teach in the future)
- Describe how you can incorporate (or have incorporated) learning styles information into the course
- Describe one strategy you can use to teach students *how* to learn the course material
- Describe a strategy that will encourage the use of learning styles and learning strategies information by other faculty in your institution

The 2004 LSU Dental School First Year Class:
An Amazing Success Story!

- Metacognition Discussion – August 13, 2004
- Histology Exam – August 23, 2004
- Previous class averages: 74 – 78
- Challenge to class on August 13: 84 average
- Reported average on August 24: 85!

Chem 1001 Results Spring 2007

	Test 1	Test 2	Final	Total points
Attended SYM Lecture on 3/2	156	109	214	801
Did not attend	154	93	153	563
Class average	153	100	176	662

*app. 80 attendees out of 200 students because session was on a Friday afternoon. Exam 1 was Wednesday, March 7.

Final Reflection Question

Who is **primarily** responsible for student learning?

- a) the student
- b) the instructor
- c) the institution

We *can* significantly increase student learning!

- We must teach students the learning process and specific strategies
- We must not judge student potential on initial performance
- We must encourage students to persist in the face of initial failure
- We must encourage the use of metacognitive tools

Useful Websites

- www.cas.lsu.edu
- www.howtostudy.org
- www.vark-learn.com
- www.drearlblach.com
- Searches on www.google.com

Special Note

Please visit the CAS website at www.cas.lsu.edu.

We have on-line workshops that will introduce you and your students to effective metacognitive strategies, including concept mapping. Please feel free to contact me at smcgui1@lsu.edu at any time. Have fun turning your students into expert learners!

Sandra McGuire

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*Excellent student reference
