Successful Critical Thinking Strategies

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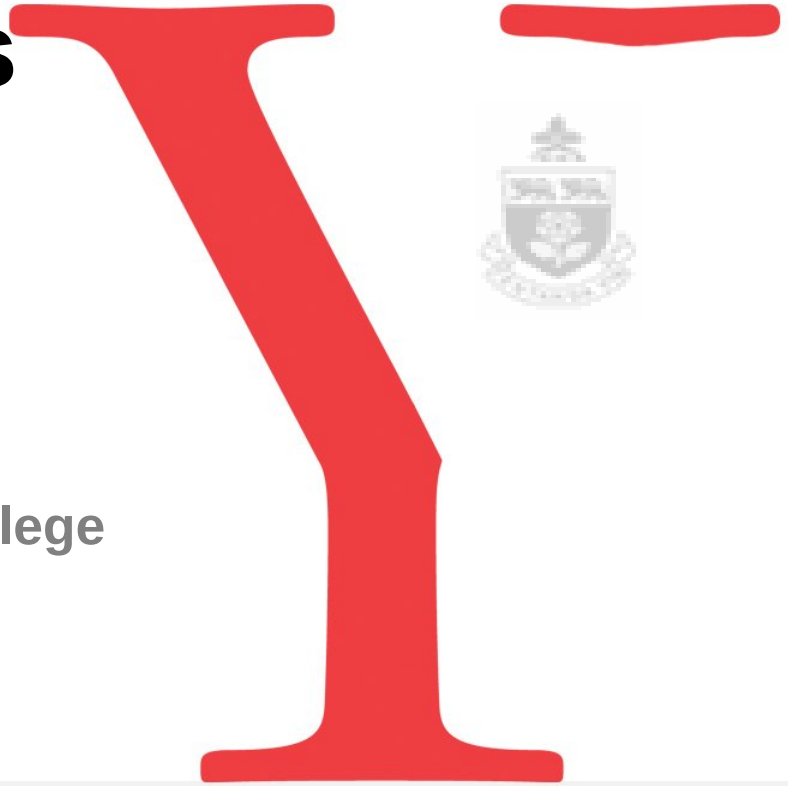

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redefine THE POSSIBLE.

Outline

- **Introduction**
- **Critical Thinking and Analysis**
- **Critical Thinking Strategies**
- **Applied Critical Thinking**

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- Critical skills are vital in order to help first year students and should be one of your most important goals inside and outside the classroom.

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- A broad framework of intellectual rigor is called critical thinking.

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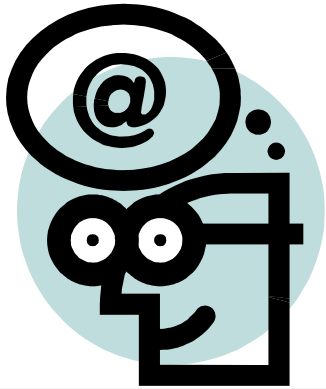
- Critical thinking skills enable people to evaluate, compare, analyze, critique, and synthesize information.



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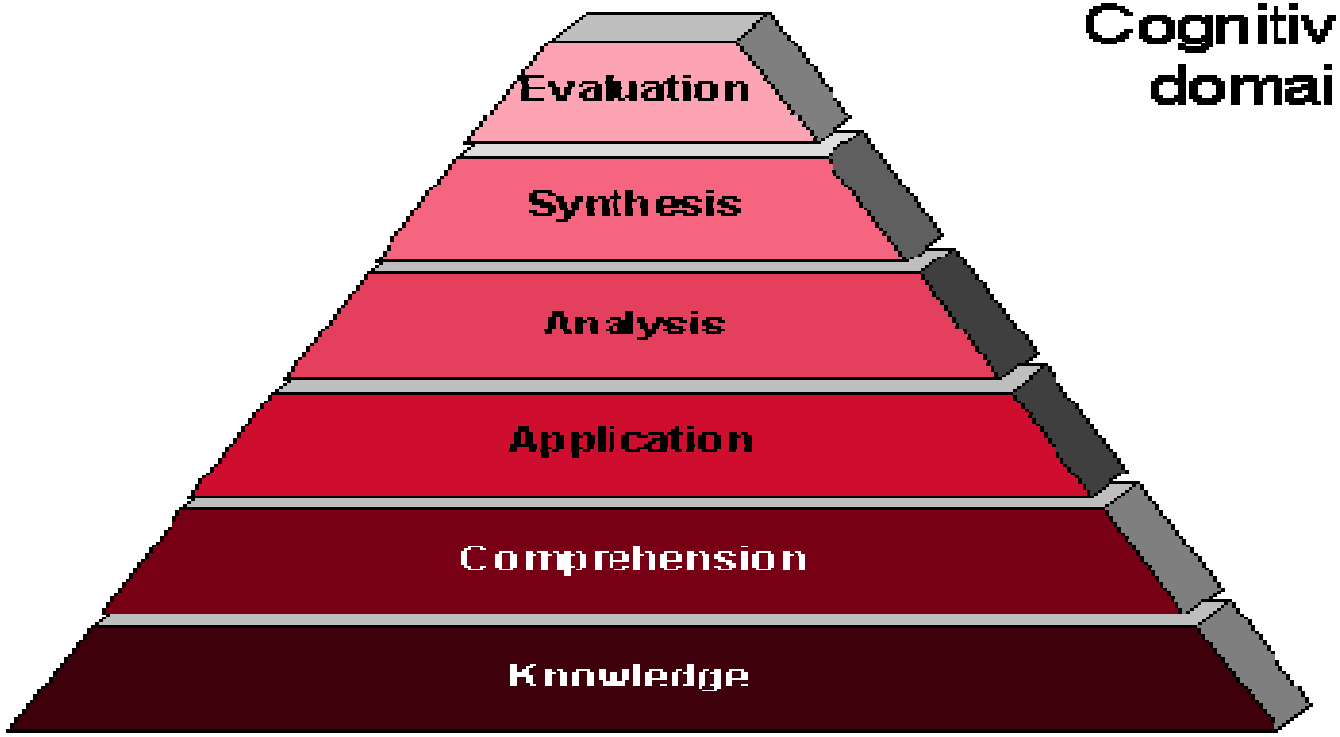
Cognitive domain



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See: Bloom, B.S. (Ed.) (1956) Taxonomy of educational objectives: The classification of educational goals: Handbook I, cognitive domain. New York: Toronto: Longmans, Green. http://eduscapes.com/tap/topic69.htm

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Thinking Skills in Bloom's Taxonomy

LEVEL	DESCRIPTION	RELATED SKILLS
Memorize	Learn course concepts and facts; produce a solid knowledge base	Recognize, recall, recite, name, define, describe
Comprehension	Show understanding of course concepts and facts	Restate, explain, interpret, discuss, summarize, defend
Application	Extend course concepts and facts in new directions	Classify, apply, produce, discover, modify, prepare
Analysis	Break ideas apart and relate to other ideas	Compare, contrast, connect, relate, categorize, analyze
Synthesis	Create new organizations of ideas	Design, organize, construct, compose, revise, develop
Evaluation	Make well-reasoned judgments and decisions	Recommend, judge, critique, decide, evaluate, support

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- Knowledge is not a collection of facts, but rather an ongoing process of examining information, evaluating that information, and adding it to your understanding.

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- Critical thinkers know to keep an open mind and may re-think their views based on new knowledge.

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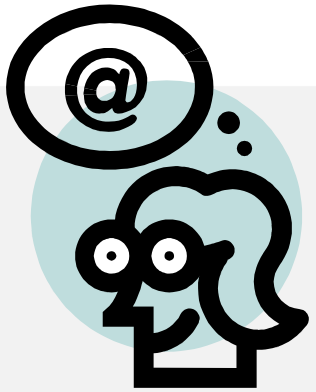
- Consider alternative positions and ideas.
- Participate in class discussions and debates.
- Interpret what you read and learn, and learn to form your own logical, informed views, even if they are counter to the prevailing views of the moment.



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EXAMPLES OF NON-CRITICAL THINKING:

- "I never heard of that before so it must not be true."
- "I don't believe it, therefore it isn't true."
- "That's not my opinion, so it can't be right."

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- **Effective Thinking is based on applying new learning to situations in order to solve problems, reach decisions, or make evaluations (Cameron, 1999:11). It involves the:**
  - **ability and general willingness to use knowledge to recognize, identify, and describe a problem.**
  - **ability to apply appropriate analytic tools, weigh relevant evidence, make logical inferences and valid abstractions.**

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- **Active Learning** involves students doing things and thinking about what they are learning. Students participate in the learning process and apply the knowledge, not just acquire it (Cameron, 1999:9).

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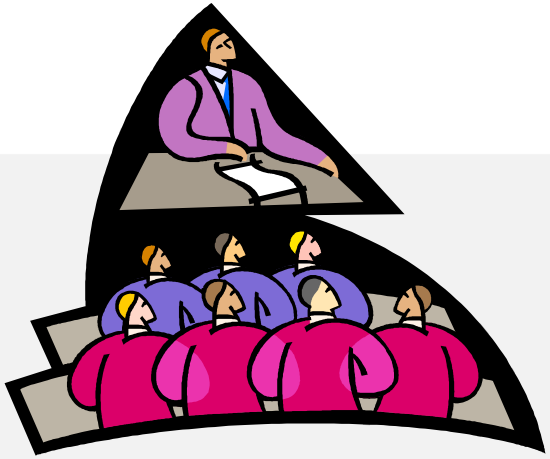
- **Critical Thinking** is based on reflective thinking that is focused on interpreting, analyzing, and evaluating information, arguments and experiences with a set of reflective attitudes, skills, and abilities to guide thoughts, beliefs and actions (Ruggiero, 1989).



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Critical Thinking and Success Strategies:

1. Consciously raising questions
2. Being aware of gaps in information
3. Distinguishing between observation & inference; fact and conjecture
4. Recognizing that words are symbols for ideas, and not ideas themselves

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Critical Thinking and Success Strategies (Con't):

5. Probing for assumptions
6. Appropriately drawing inferences from data
7. Performing hypothetical-deductive reasoning
8. Discriminating between inductive and deductive reasoning
9. Testing one's own line of reasoning
10. Being aware of one's own reasoning

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Other Critical Thinking and Success Strategies:

- Identifying key definitions
- Identifying ambiguity
- Identifying variables
- Formulating questions
- Defining issue or problem
- Classifying information
- Sequencing information
- Recognizing patterns
- Determining credibility

- Distinguishing fact from opinion
- Identifying assumptions
- Identifying values
- Noting missing evidence
- Identifying relationships
- Comparing & contrasting
- Cause and effect
- Summarizing information
- Using analogies

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- **Strongly related to developing conceptual understanding.**
- **Best done when students are continuously pummeled with questions that demand a conceptual explanation.**
- **Approach:**
  - Present the problem
  - Let students think
  - Socratically question

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- **QUESTIONS TO ASK IN MAKING CRITICAL EVALUATIONS ABOUT ISSUES OR ANY ACADEMIC TOPIC:**

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Critical Thinking and Guiding Questions:

1. **What data is presented?**
2. **What conclusions are presented, and how are they organized (as tentative hypotheses or as more dogmatic assertions)?**

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Critical Thinking and Guiding Questions (Con't):

3. **Are these views the individual opinions of the authors, or are they supported by a larger body of research?**
4. **What are the research findings? Are they adequately documented?**

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Critical Thinking and Guiding Questions (Con't):

5. Is the information consistent with information that you already possess?

If not, can the inconsistencies be explained?

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Critical Thinking and Guiding Questions (Con't):

6. Are the conclusions (hypotheses) testable? How might one go about testing the various hypotheses that are presented?

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Critical Thinking and Guiding Questions (Con't):

7. If presentation of new research findings is at odds with previous hypotheses (or theories), must these hypotheses now be modified (or completely rejected)?

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Critical Thinking and Guiding Questions (Con't):

8. What were/are the biases of the time when the research was conducted?
9. Are these likely to affect what was/is studied and how it was/is interpreted?

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Critical Thinking and Guiding Questions (Con't):

10. How do your own personal views bias you in interpreting the results?
11. Once you have identified your own biases, are you able to set them aside so as to evaluate the information objectively?

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Critical Thinking and Guiding Questions (Con't):

12. Are you able to discuss both the pros and cons of a scientific topic in an evenhanded manner?

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