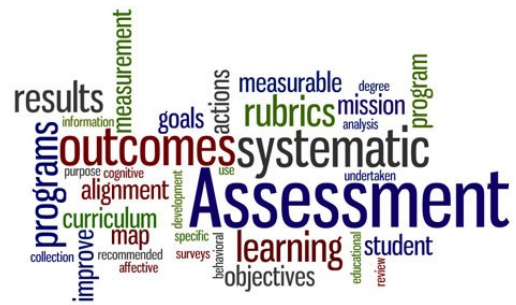




FACULTY TOOLBOX - SOMETHING TO CONSIDER...



Assessment Newsletter

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IDEAS TO HELP TEACH CRITICAL THINKING SKILLS

(I bet you already do this and didn't know you were utilizing higher level Critical Thinking Skills)

Critical thinking skills are skills that students need to learn to be able to solve problems. This includes analyzing and evaluating information that is provided, whether that information is through observation, experience or communication. The core of critical thinking is being responsive to information and not just accepting it. Questioning is the most important part of critical thinking. It is a part of scientific, mathematical, historical, economic and philosophical thinking, all of which are necessary for the future development of our society.

Socrates (*Socratic Method*) was famous for teaching critical thinking through questioning. Students are already naturals at questioning, so turn the tables a little and question them back. Take an opposite position and try to get them to defend their opinions on a topic by asking pointed questions. Ask students to defend their answers and ask them "Why" they think or answer the way they did.

Higher order thinking is not simply pondering random thoughts. Students should learn how to approach an issue, ask questions, examine assumptions, synthesize and analyze the subject and make a reasoned conclusion. These skills need not be taught directly in the students' most challenging courses; students can learn to think critically and analytically in virtually every college classroom. In addition, interactions with faculty and their peers provide opportunities to develop higher order thinking skills.

For the Student: Reading is the basis of all thinking and decision-making processes. College classes require a lot of reading, even in the sciences. Absorb new knowledge when you read, and read with critical eyes. Determine if your reading makes sense. Relate prior reading, class discussions and your personal experience when you read your class assignments. The more critically you read, the more refined your thinking skills will be. When you find topics that interest you, research the topic. Ask your professors for interesting articles or books. Make use of the college library and request inter-library loans.

Adding operational verbs from Blooms Taxonomy into your assignments and instructional practice increase learning.

See the next page for the Operational VERB list from Bloom's Taxonomy that you can integrate into your lessons to

increase higher learning and critical thinking skills

<i>Revised Bloom's Taxonomy</i> <i>Thinking Category</i>	Sample Operational Verbs
<u>REMEMBER</u> Retrieving relevant knowledge from long-term memory (lower level skills)	Articulate, Define, Find, Identify, Label, List, Locate, Name, Quote, Recall, Recognize, Reproduce, Retrieve
<u>UNDERSTAND</u> Determining the meaning of instructional messages, including oral, written, and graphic communication (lower level)	Associate, Comment, Describe, Differentiate, Discuss, Explain, Express, Extend, Exemplify, Generalize, Illustrate, Interpret, Paraphrase, Predict, Report, Restate, Rerword, Summarize, Translate
<u>APPLY</u> Carrying out or using a procedure in a given situation	Carry out, Conduct, Compute, Dramatize, Employ, Execute, Experiment, Give Examples, Investigate, Use, Implement, Interview, Operate, Practice, Predict, Role-play, Solve, Transfer
<u>ANALYZE</u> Breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose	Attribute, Classify, Contrast, Compare, Deconstruct, Debate, Deduce, Diagram, Differentiate, Discriminate, Distinguish, Examine, Integrate, Organize, Outline, Relate, Research, Separate, Structure
<u>EVALUATE</u> Making judgments based upon criteria and standards	Alpha/Beta Test, Appraise, Assess, Check, Conclude, Convince, Critique, Defend, Detect, Judge, Moderate, Monitor, Predict, Rate, Recommend, Support, Test
<u>CREATE</u> Putting elements together to form a novel, coherent whole or make an original product	Assemble, Compose, Create, Choreograph, Construct, Design, Devise, Formulate, Generate, Invent, Make, Mix, Plan, Produce, Program, Set up, Remix

ADDITIONAL RESOURCES/EXAMPLES:

Writing Objectives: <http://teaching.uncc.edu/sites/teaching.uncc.edu/files/media/files/file/GoalsAndObjectives/BloomWritingObjectives.pdf>

Integrating Critical Thinking into Mathematics: <http://www.math.toronto.edu/writing/BloomsTaxonomy.pdf>

Learning Style Quiz: <http://www.educationplanner.org/students/self-assessments/learning-styles.shtml>

College Teaching Tips using Bloom's Taxonomy: <http://collegeteachingtips.com/354/blooms-taxonomy>

Crash Course on Bloom's Taxonomy: <https://www.youtube.com/watch?v=4Fy5MUzdWMg>

Explanation of Bloom's & Examples: <https://www.youtube.com/watch?v=lv-cL8dwaA0>

How to Teach Critical Thinking: <http://www.docstoc.com/docs/147590378/How-to-Teach-Critical-Thinking>

SOME LINKS TO RUBRICS FOR EVALUATING CRITICAL THINKING - SAMPLES

Critical Thinking Rubric (Scranton) <http://academic.scranton.edu/department/assessment/ksom/Critical-Thinking-Rubric.doc>

Critical Thinking Rubrics (<http://www.winona.edu/AIR/rubrics.htm>)

Gen Ed Critical Thinking Rubric (NE Illinois University) <http://www.winona.edu/AIR/resourcelinks/Critical%20Thinking-long.pdf>

Levels Of Performance For Framing & Resolving Ill-Defined Problems http://www.insightassessment.com/pdf_files/USAF_Rubric.PDF

CA State University, Critical Thinking Scoring Guide http://www.csufresno.edu/irap/assessment/documents/CT_rubric_1_12006.pdf

CA State University, Gen Ed Scoring Guide http://www.csufresno.edu/irap/assessment/documents/Critical_Think_Rubric_0606_02.pdf

The New Critical and Integrative Thinking Rubric (Washington State University) <http://wsuctproject.wsu.edu/ctr.htm>

Critical Thinking Scoring Rubric <http://openedpractices.org/files/Bismark%20State%20Multiple%20Critical%20Thinking%20Rubric.pdf>

Critical Thinking Rubrics (Bloom's taxonomy)

<http://openedpractices.org/files/Bloom%20North%20Hennepin%20CC%20Critical%20Thinking%20Rubric.pdf>

Developmental Stages of Inquiry http://openedpractices.org/files/BGSU%20___%20Offices%20___%20Student%20...pdf

Critical Thinking and Research Skills <http://openedpractices.org/files/CT%20and%20research%20Univ.%20of%20MD%20CTE.pdf>

Designing Rubrics for Assessing Higher Order Thinking (Howard Community College)

<http://openedpractices.org/files/Designing%20CT%20rubrics%20several%20with%20repeats.htm>

Critical Thinking Scoring Rubric (Arkansas State University-Jonesboro)

<http://openedpractices.org/files/critical%20thinking%20scoring%20rubric.pdf>

Rating Guide for Critical Thinking (George Mason University)

<http://openedpractices.org/files/George%20Mason%20Critical%20Thinking%20Rubric.pdf>

Measuring My Critical Thinking (Valencia Community College)

<http://openedpractices.org/files/CT%20self%20assessment%20Valencia%20CC.pdf>

Rubric for assessing Critical Thinking (Oklahoma State University)

<http://openedpractices.org/files/CT%20OK%20State%20Univ.%20Wash%20St.%20edit.pdf>

Steps for Better Thinking <http://openedpractices.org/files/U%20of%20VA%20Adapted%20Wolcott%20Better%20Thinking%20Rubric.pdf>

Your Progress As a Critical Thinker (Valencia Community College)

<http://openedpractices.org/files/CT%20post%20it%20rubric%20Valencia%20CC.pdf>

Critical Thinking Rubric (University of Charleston) <http://openedpractices.org/files/ct%20rubric%20U%20of%20Charleston.pdf>

Critical Thinking Rubric (State University of New York) <http://openedpractices.org/files/SUNY%20Coll%20at%20Old%20Westbury.pdf>

University Studies Critical Thinking Rubric (Portland State University) http://openedpractices.org/files/rubric_critical_thinking%20PDX.pdf

Instructional Design <http://www.instructionaldesign.org/theories/index.html>