Addressing & Assessing Critical Thinking Skills

Beginning in Fall, 2014, required in ALL core components
Overview

- **THECB Definition of Critical Thinking Skills**
- **Bloom’s Taxonomy: Cognitive Domain**
- **Instructional Cycle**
- **Recall Level vs. Above Recall Level: Examples**
THECB Definition of Critical Thinking Skills

“creative thinking, innovation, inquiry, & analysis, evaluation & synthesis of information.”

So how do I implement this in my class?
Bloom’s Taxonomy: Cognitive Domain

A. Knowledge

Rote memorization

B. Comprehension

Student re-states material in his/her own words

C. Application
D. Analysis
E. Synthesis
F. Evaluation

Recall Level: Foundation for Above Recall, Critical Thinking

Above Recall Level: Critical Thinking
Bloom’s Taxonomy: Cognitive Domain

A. Knowledge
B. Comprehension

C. Application
Uses a skill or concept in a new way or new situation

D. Analysis
Breaks down concept into parts & analyzes relationship between the parts

E. Synthesis
Puts parts together to form a new whole; integrates material already learned

F. Evaluation
Judges the value of something based on specified criteria

Recall Level

Above Recall Level: Critical Thinking Builds on Knowledge Base
Instructional Cycle

Planning

Evaluation

Implementation
Instruction & assessment are connected & should be in the same “taxonomic neighborhood.”

- **During instruction:**
  - Use numerous examples & activities to illustrate/practice concepts.

- **To assess:**
  - Use different examples for exams than those used in class.
  - Require students to use or create new material in class projects/assignments.
  - Depending on the nature of the material, use either a rubric or embedded exam questions.
Recall vs. Above Recall

Examples
Recall Level Example

What is the definition of negative reinforcement?

Knowledge Level.

Students provide textbook definition verbatim.

Comprehension Level.

Students provide definition in their own words.

At Both Levels:

We give students information. They give it back.
Above Recall Level Example

Application Level.

Use the data set below to create a pie chart.

[Data provided for students.]

At this level, students:

- know & understand material
- draw from their knowledge base to use new material
- apply theories to practical situations, solve math problems, demonstrate correct usage of a method or procedure.
Above Recall Level Example

Analysis Level.

Identify the meter in the poem below.

[Poem not used previously.]

Students:

- identify & classify examples not previously seen
- analyze the relationships between the parts
- must be given material to analyze
- may distinguish between fact & inference; analyze the structure of writing, a piece of artwork or music, a machine, etc.
Above Recall Level Example

Synthesis Level.

*Develop & deliver a persuasive speech.*

Students integrate material and create something new.

**Examples:**

- design an experiment
- write a poem or short story
Above Recall Level Example

Evaluation Level.

*Using the 5 criteria discussed in class, evaluate each of the debate propositions below. Justify your evaluation.*

[List debate propositions.]

At this level:

- Students appraise, critique, justify.
- Students’ answers are based on specified criteria (not just opinion).
- If assessed via embedded exam questions, options provided for students may be technically correct but one is clearly, defensibly better.
- We evaluate students’ justification; not their opinions.