Applying Critical Thinking to Teaching and Learning

PEN International
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Objectives for Today

- Identify different aspects of critical thinking (CT), including what is happening with NTID’s outcomes assessment plan
- Include teaching/learning strategies to increase students’ fund of knowledge and CT skills
- Structure assignments to expand CT skills
- Create evaluation methods for higher order of thinking about the subject matter in a course
- Identify CT resources
What is critical thinking?

“…Purposeful, self-regulatory judgment…”

(Delphi definition)

MCC General Education Initiatives

Bloom’s Taxonomy

Addressing tasks by generating alternatives and comparing pros and cons to reach an informed conclusion (NTID CT Rubric)
Bloom’s Taxonomy

Cognitive levels:

Knowledge:  *What do I know?*

Comprehension:  *What does this mean?*

Application:  *How can I use what I know in different situation?*

Analysis:  *Why does this work as it does?*

Synthesis:  *What can I create from the information and ideas I have?*

Evaluation:  *Is this accurate, useful, effective, economical or satisfying?*
Other key words/phases

- Logical thinking
- Reasoning
- Compare/contrast
- Sequencing
- Questioning
- Drawing inferences
- Perspective taking
- Argumentation
- Cause/effect
- Thinking outside of the box
Teaching/learning strategies

- Instruction
- Assignments
- Evaluation
Instruction:

1) Interactive learning

Teacher can demonstrate CT through:

- Asking, probing, questions (why, what about, tell me more, explain)
- Using analogies and comparisons
2) Fund of Knowledge

Teacher can:

- Recognize when students need to know more about a topic before making decisions or drawing conclusions
- Ask students about knowledge of topic and provide background information or real-time search for information
- Give students references and resources for seeking information on their own
3) Connection to prior learning

Teacher can:

- Make connections between what students are learning now and how it applies to other situations
- Facilitate transfer of knowledge in and out of the classroom
4) Mediated learning

Teacher can:

- Add *some* information

- Fill in the blank that facilitates student’s understanding or ability to complete the task
5) Teach HOW to learn

Teacher can:

- Demonstrate “how to” learn the subject material (specific learning strategies) at the beginning of the course

- Shift responsibilities to students from “showing how to” to “I can do it” by the end of the course
6) Other perspectives

Teacher can:

- Encourage inquiry about others’ answers, opinions and points of views
- Encourage comparison of own point of view with other students’ and “experts”
- Set-up class debates or discussion
7) Feedback

Teacher can:

- Provide feedback that requires students to use critical thinking to revise work before resubmission.
- Use ideas from handout – *Responding to Student Writing*
8) More strategies...

Teacher can:

- Give students high but attainable expectations
- Respect the diversity of students’ learning styles; give them a variety of ways in which to learn and to demonstrate what they have learned
- Use other strategies listed on handouts (e.g. page 11 - Magna)
Assignments that promote CT

Teacher can:

- Choose verbs to fit the kind of thinking you want students to use
- Know what kind of thinking the words on your assignment will require
- Ask questions or require thinking ONE step above where students have demonstrate ability (scaffolding)
Search for knowledge

Teacher can:

- Require printout of internet search about topics to increase fund of knowledge
  - Google: www.google.com

- Require printout of dictionary or Google image search for words that are unfamiliar
  - Longman Dictionary: www.ldoceonline.com
Set high standards

Teacher can:

- Expect students to submit their best work
- Require students to have an assignment edited by “second eye”
- Require students to proofread their work for grammar, spelling, for following directions
Evaluation

- Structure course activities so that units build on each other

- Learning of each “small segment” assures success later because of connections between segments

- The “test” is no surprise or difficulty
Multiple assessment

- **Quizzes**
  - Questions that cover a range of thinking levels in Bloom’s taxonomy

- **Open book/open note tests**

- **Projects that integrate learning**
  - Presentations
  - Experiments
  - Portfolio
Barrier Free Evaluation

Give modality choices so students can demonstrate their thinking and knowledge without language barriers:

- Written or typed
- Video or audio recording
- Creative visual display (diagram, chart, graph)
- Model, stimulation or illustration
- Demonstrations
Resources


Website resources:
- www.austhink.org/critical/pages/definitions.html
- www.criticalthinking.org

Magna Conference Suggested Readings

Adapted from March 29, 2006 PowerPoint presentation by Marianne Gustafson and J. Matt Searls