MAGNA ONLINE SEMINARS

PowerPoint Handouts

Teaching Critical Thinking to Students: How to Design Courses That Include Applicable Learning Experiences, Outcomes, and Assessments

Presented by:
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Linda wrote The Graphic Syllabus and the Outcomes Map: Communicating Your Course (Anker/Jossey-Bass, 2007), Creating Self-Regulated Learners: Strategies to Strengthen Students' Self-Awareness and Learning Skills (Stylus, 2013), and Specifications Grading: Restoring Rigor, Motivating Students, and Saving Faculty Time (Stylus, 2015). Her next book, Online Teaching at Its Best (now in its fourth edition), with co-author Ludwika A. Goodson, is in progress for Jossey-Bass. She is also beginning a book on discussion with Jennifer Herman for Stylus.

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Teach Critical Thinking to Students:
How to Design Courses That Include Applicable Learning Experiences, Outcomes, and Assessments

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Participant Outcomes
with "Next Steps"

- To design a discipline-based course that incorporates critical thinking.
- To write and organize assessable student learning outcomes targeting critical thinking.
- To assess your students' progress in achieving those outcomes.
- To develop and integrate student learning experiences that advance critical thinking skills.

Where Critical Thinking (CT) Applies

Where a "claim" may be questionable.

"Claim" = belief, value, problem definition, interpretation, generalization, analysis, viewpoint, hypothesis, solution, inference, decision, or conclusion—***not*** a fact or an agreed-upon definition.

Why a Claim May Be Questionable

- Evidence is uncertain or ambiguous.
- Multiple respectable "conclusions" exist (issues of disagreement, debate, controversy).
- Source is suspect.
- Evaluation process is non-standardized or undetermined.

Other reasons

What is a claim in your discipline that you want your students to question and think critically about?

Write it in the chat box.

Various CT Frameworks

- Brookfield (focus on "assumptions")
- Halpern (cognitive psychology)
- Paul & Elder, Foundation for Critical Thinking
- Facione & Delphi Report (basis of CCTST)
- Wolcott (& Lynch) – Steps to More Complex/ Critical Thinking
- Bloom's higher-level cognitive operations
- Perry's Stages of UG Cognitive Development

Points of Overlap

1) CT involves *interpretation/analysis*, then *evaluation/judgmen*t.

2) CT is *difficult* and *unnatural* and takes time and effort to learn.

3) CT is not only cognition but also *character* and *mental health.*

Paul and Elder's "Intellectual Traits" of Character

- Intellectual humility
- Intellectual autonomy
- Intellectual integrity
- Intellectual courage
- Intellectual perseverance
- Intellectual curiosity
- Confidence in reason
- Fairmindedness

Facione and Delphi Group's Dispositions Toward CT

- Wide-ranging inquisitiveness
- Desire to be well-informed
- Desire to use critical thinking
- Trust in reasoned inquiry
- Confidence in one's reasoning abilities
- Open-mindedness

- Flexibility in considering alternatives
- Understanding of others' opinions
- Fair-mindedness
- Honesty with self about own biases, prejudices, stereotypes, egocentrism
- Prudence in suspending/altering views
- Willingness to revise views when warranted

Emotional Health to Counter "Psycho-logical Fallacies" (Nilson 1997)

- Assimilation
- Denial
- Displacement
- Externalization
- Projection
- Rationalization
- Regression
- Repression
- Resistance
- Selective Perception and Recall
- Sublimation
- Suppression
- Transference
- Withdrawal

4) CT requires *background knowledge* of subject matter.

5) CT requires *explicit* and *intentional* integration into a course, or students won't learn it.

6) CT requires *self-awareness/ metacognition/self-regulation.*

Halpern's Dispositions
(Self-Regulated Learning)

- Willingness to give effort to and persist at complex tasks
- Conscious planning and follow-through and suppression of impulsive activity
- Open-mindedness and flexibility
- Willingness to self-correct and abandon ineffective strategies

To Design a CT-Infused Course, Include Solid CT Outcomes

- Outcomes = statements of what students should *be able to do* by end of the day, week, unit, or course.

- "Performances" you can *observe* so you can assess and set standards for
  - Use high-level ***active verbs***: "analyze," "apply," "classify," "compare/contrast," "create," "critique," "defend," "develop," "design," "evaluate," "infer," "interpret," "illustrate," "synthesize," "verify," "test"
  - ***Not*** internal states of mind: "know," "learn," "feel," "understand," "appreciate"

Sequence Your Outcomes

- **Foundational** – basic abilities: define CT skills; ID fallacies or parts of an argument; abandon misconceptions, like:
  - CT is negative thinking.
  - CT is anti-the-way-things-are.
  - CT is reproducing expert opinions.

- **Mediating** – progress through a developmental model (e.g., Perry, Wolcott, Paul & Elder) ***OR*** interpret/analyze/evaluate progressively more advanced/challenging claims, cases, or arguments.

- **Ultimate** – think at target stage of development ***OR*** analyze/evaluate/evaluate the most advanced/challenging claims, cases, or arguments that you believe your students can handle.

  ➡ ***"Outcomes Map"*** of your students' learning process

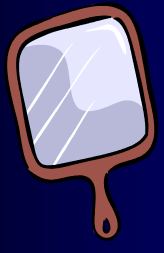
Discipline-Relevant CT Skills/Outcomes (Handout)

- Check those relevant to your course and modify for better fit.
- Write more as necessary.
- Sequence them in the order students will achieve them.

Write in the chat box
1) your discipline and
2) one of your critical thinking outcomes.

Assessments Should *Mirror* Outcomes.

Outcome



Assessment

That is ….

If you want your students to be able to do X, Y, and Z, have them do X, Y, and Z and assess how well they can do them.

Assessing CT Skills

1. Stimulus-based multiple choice or multiple TF items

- Stimulus: mini-case, data set, graph, table, diagram, map, quotation, passage, poem, problem, spreadsheet, schematic, description of an experiment

- Stimulus-based items

  = a ***series*** of multiple choice or multiple T/F items (or both) around a new*, realistic ***stimulus*** that students must interpret/analyze correctly to answer the items accurately.

  ** New to the students*

- Multiple True/False Items
  - Each option below stem is a T/F item.
  - More flexible, efficient, reliable than multiple choice
  - Easier and quicker to develop
  - No process-of-elimination, so more challenging
  - Stem must be clear.

OR

2. Student-generated product
   - answer to question, solution to problem, paper, report, program, project, portfolio, oral or multimedia presentation, performance, artistic work, debriefing of simulation or role play, or demonstration (e.g., of technical problem solving, a procedure).
   - *Plus* reflective meta-assignment on how students did it (metacognition, self-regulated learning)

About the Product Prompt

- Assign CT questions/tasks that match your targeted CT skills.
- Make question/task focused and well-defined; okay to suggest types of thinking and content to use.
- Best to place question/task in realistic problem/situation *("authentic")*.
- Assess with a rubric. (Handout for URLs)

Before you assess *formally*, assess *informally* to:

- Give students *practice* in performing your outcomes with feedback from you, peers, or computer program.
- Get frequent *feedback for yourself* on their progress.

…which brings us to teaching

Teaching Guidelines

- Ask CT questions/assign CT tasks that match your targeted CT skills and content.
- Be sure students get **feedback** from you or each other on their responses. (Handout for examples)

For *practice* applying or transferring CT skills:

- Class discussions (about cases, problems, arguments)
- Debates, structured controversy
- Inquiry-guided activities (make sense of data, figure out how to solve problems)
- Journaling, writing-to-learn exercises

- Worksheets
- Simulations, role plays
- Drafts of papers, projects, presentations
- Brookfield's in-class CT exercises https://static1.squarespace.com/static/5738a0ccd51cd47f81977fe8/t/5750ef2d62cd947608165cf2/1464921912225/Developing_Critical_Thinkers.pdf pp. 17-44

Mistakes to Avoid

- Low-level questions/tasks: to recognize, regurgitate, or rephrase content
- Claims that aren't questionable
- Insufficient wait time
- No feedback

Demonstration: Poll

1. "What is a claim in your discipline that you want your students to question and think critically about?" Is this a CT question/task?
   a) No, not for anyone in this seminar.
   b) Yes, for those who thought of a new one.
   c) Yes, for everyone in this seminar.

Demonstration: A Good CT Prompt

2. Evaluate these two quotations that interpret education differently. Which do you think is more valid and why?
   - "The result of the educative process is capacity for further education."
     – John Dewey
   - "Colleges are places where pebbles are polished and diamonds are dimmed."
     – Robert G. Ingersoll

Teaching Resources: Questions/Tasks, Assignments

- Facione (2016)
  http://www.insightassessment.com/Resources
- Wolcott (2015)
  http://www.wolcottlynch.com/SiteAssets/educator-resources/Handout_HKUST_030617.pdf

- Paul & Elder (2015)
  http://www.criticalthinking.org/pages/how-to-study-and-learn-part-four/516
  http://www.criticalthinking.org/pages/how-to-study-and-learn-part-three/515
  http://www.criticalthinking.org/pages/becoming-a-critic-of-your-thinking/605
  http://www.criticalthinking.org/pages/applied-disciplines-a-critical-thinking-model-for-engineerin/578

- Bonwell, C. (2012). A disciplinary approach for teaching critical thinking. *National Teaching & Learning Forum, 21*(2), 1-7.
- Bibliography (Handout)

Next Steps

1. Look at the teaching resources above.
2. Finish writing your CT-related student learning outcomes.
3. Decide on their sequencing.
4. Write assessments for these outcomes.
5. Finish drafting questions and tasks that will provide practice in the outcomes.

Tell us what you think

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Thank you!