

# Faculty Critical Thinking Workshop, September 4, 2008

## Critical Thinking according to Bethel College

We have defined critical thinking as a process of successfully analyzing, assessing, and reconstructing information in an objective manner. It will involve the ability to view new information with an open mind, the ability to recognize external and internal biases, discerning both strengths and weaknesses of the information. Ultimately, the critical thinker will use information in an effective and ethical manner on a consistent basis.

## Pedagogical Implications

Some students will acquire skills by observing them practiced; many won't. Therefore, most students need to be active participants in order to learn.

In a course focused on critical thinking:

- problems that students will think, write, and talk about.
    - collaborative learning and writing-to-learn.
  - thought processes and learning processes.
    - Standards are made explicit.
  - student skills development.
    - Assignments target the level of
- The course is organized around  
Hence emphasis on both  
Students reflect on their own

Please note:

- Courses can include these features to different degrees.
- These reflect how one teaches, not what one teaches.

## Kurfiss on Critical Thinking Pedagogy

“Several principles can be extracted from this brief review of teaching practices that support critical thinking:

1. Critical thinking is a learnable skill; the instructor and peers are resources in developing critical thinking skills.
2. **Problems, questions, or issues are the point of entry into the subject** and a source of motivation for sustained inquiry.
3. Successful courses balance challenges to think critically with support **tailored to students' developmental needs**.
4. **Courses are assignment centered** rather than text and lecture centered. Goals, methods, and evaluation emphasize using content rather than simply acquiring it.
5. Students are required to formulate and justify their ideas in writing or other appropriate modes.
6. **Students collaborate** to learn and to stretch their thinking, for example, in pair problem solving and small group work.

7. Several courses, particularly those that teach problem-solving skills, **nurture students' metacognitive abilities**.
8. The developmental needs of students are acknowledged and used as information in the design of the course. **Teachers** in these courses **make standards explicit** and then help students learn how to achieve them.” [My emphasis]

Joanne Gainen Kurfiss, *Critical Thinking: Theory, Research, Practice, and Possibilities*, 1988, pp. 88-99. Available on Eric: <http://www.eric.ed.gov/> (search for ED304041)

## CAT Developers on Critical Thinking Pedagogy

The developers of the CAT say the following types of exercises as good preparation for their test. Since the CAT is intended to test critical thinking ability, this amounts to a statement of what they think constitutes good instruction in critical thinking:

- Active-learning with real-world problem solving
- Service learning
- Debates
- Simulations
- Case studies
- Involving students in original research

## Methods for Dividing Students into Groups

- Students belong to a given group all semester:
  - Necessary if groups work on large projects
  - optional if you want them to form a sense of community (e.g., with freshmen)
- Students form new groups every day
  - Common for shorter exercises
  - Allows students to meet more people, encounter wider range of beliefs
- Ways of forming groups
  - Have students form their own groups (generally will mean friends work together)
  - Have people count off
    - Rule: # of groups = # of people / # per group
  - Use RAND in Excel

## Some Terminology

- “In **cooperative learning**, the use of groups supports and instructional system that maintains the traditional lines of classroom knowledge and authority. . . in cooperative learning, the teacher retains the traditional dual role of subject matter expert and authority in the classroom.” (Barkley, Cross, & Major)
- “**Collaborative learning** occurs when students and faculty work together to create knowledge . . . It is a pedagogy that has at its center the assumption that people make meaning together and that the process enriches and enlarges them.” (Matthews)
- **graded** v. **ungraded**, **high stakes** v. **low stakes**,
- **formative assessments** (help students learn how they are doing) v. **summative** (graded)

from a generic syllabus by Gianna Durso-Finley

<b>Schedule</b>	
<b>Session</b>	<b>Notes</b>
Week 1	Read Chapter 1 – History, Method and Theory Activity: Sociological hypothesis testing versus common sense
Week 1	Chapter 1 - Activity: Major theorist role play
Week 2	Chapter 1 - Activity: Small group analyses
Week 2	Chapter 1 - Activity: Small group analyses
Week 3	Chapter 1 - Activity: Small group analyses
Week 3	Chapter 2 – Culture Activity: Class conversation / Martian instructions game -
Week 4	Chapter 2 - Activity: Pair work on U.S. values and value conflicts
Week 4	Chapter 2 - Activity: In-class writing
Week 5	Chapter 3 – Socialization Activity: Self-analysis / Role play
Week 5	Chapter 3 - Activity: Film Critique/Self- analysis
Week 6	Chapter 3 - Activity: Exam 1
Week 6	Chapter 4 – Social Structure and Social Interaction Activity: Jigsaw / Self-analysis
Week 7	Chapter 4 - Activity: Mini-skits Information Literacy Assignment due!!!
Week 7	Chapter 4 - Activity: In-class writing
Week 8	Chapter 5 – Societies and Social Networks Activity: Jigsaw
Week 8	Chapter 5 - Activity: Write-your-own exam questions
Week 9	Chapter 5 - Activity: Film critique
Week 9	Chapter 6 – Deviance and Social Control Activity: Position paper
Week 10	Chapter 6 - Activity: In-class writing
Week 10	Chapter 6 - Activity: Exam 2
Week 11	Chapter 7 – Social Stratification Activity: Jigsaw
Week 11	Chapter 7 - Activity: Oral Presentations
Week 12	Chapter 8 – Sex and Gender Activity: Debate
Week 12	Chapter 8 - Activity: Debate
Week 13	Chapter 9 – Race and Ethnicity Activity: Class conversation/Film critique
Week 14	Chapter 9 - Activity: In-class writing
Week 14	Chapter 10 – Marriage and the Family Activity: Class conversation
Week 15	Chapter 10 - Activity: In-class writing / Self-analysis
Week 15	Final Exam
Exam Period	Review

*Pages 4-5 were zeroes from Barkely, Cross, and Major, Collaborative Learning Techniques: A Handbook for College Faculty, Jossey-Bass, 2005, pp 156-7, 166-7. Due to copyright I am not including them in this online version. The goal was to illustrate how the book is structured.*

*The following two pages were zeroxed together into page 6 of the handout. They give brief summaries of four Collaborative Learning Techniques (CoLTS) discussed in the book, then a listing of all 30 CoLTS.*

*We did not get around to discussing pages 8-9, which are therefore not included in this version.*

## **Some CoLTS in Brief**

**Think-Pair-Share:** In this simple and quick technique, the instructor develops and poses a question, gives students a few minutes to think about a response, and then asks students to share their ideas with a partner.

**Round Robin** is primarily a brainstorming technique in which students generate ideas but do not elaborate, explain, evaluate, or question the ideas. Group members take turns responding to a question with a word, phrase, or short statement.

**Buzz groups** are teams of four to six students that are formed quickly and extemporaneously to respond to course-related questions. Each group can respond to one or more questions; all groups can discuss the same or different questions. Discussion is informal, and students do not need to arrive at consensus, but simply exchange ideas.

In **Learning Cells**, students individually develop questions about a reading assignment or other learning activity and then work with a partner, alternating asking and answering each other's questions. . . . Creating questions about an assignment requires students to think about the content in a way that is different from simply taking notes on it. It provides an opportunity for students to think analytically, to elaborate as they put material into their own words, and to begin to use the language of the discipline.

An Overview of Collaborative Learning Techniques (CoLTS) in  
 Barkley, Cross, and Major, *Collaborative Learning Techniques*, 2005.

Colt #	Name	Time Allotted	Colt #	Name	Time Allotted
1	Think-Pair-Share	5-15 minutes	16	Structured Problem Solving	1-2 hours
2	Round Robin	5-15 minutes	17	Analytic Teams	15-45 minutes
3	Buzz Groups	10-15 minutes	18	Group Investigation	several hours
4	Talking Chips	10-20 minutes	19	Affinity Grouping	30-45 minutes
5	Three-Way Interview	15-30 minutes	20	Group Grid	15-45 minutes
6	Critical Debate	1-2 hours	21	Team Matrix	10-20 minutes
7	Note-Taking Pairs	5-15 minutes	22	Sequence Chains	15-45 minutes
8	Learning Cell	15-30 minutes	23	Word Webs	30-45 minutes
9	Fishbowl	25-35 minutes	24	Dialogue Journals	varies
10	Role Play	15-45 minutes	25	Round Table	10-20 minutes
11	Jigsaw	varies	26	Dyadic Essays	30-45 minutes
12	Test-Taking Teams	varies	27	Peer Editing	2 hours
13	Think-Aloud Pair Problem	30-45 minutes	28	Collaborative Writing	several hours
14	Send-A-Problem	30-45 minutes	29	Team Anthologies	several hours
15	Case Study	varies	30	Paper Seminar	varies

Note: these are the authors' estimates. Variations can significantly alter times required. Peer editing can be done much more quickly, for example.

A similar technique, the "minute paper," takes about . . . one minute to complete.

	A	B	C	D	E	F	G	H	I	J	K
1	<b>How to Create Random Lists of Students for Group Activities</b>										
2											
3	<b>Step 1</b>	<b>Step 2</b>	<b>Step 3</b>			<b>Step 4</b>	<b>Step 5</b>	<b>Step 6</b>	<b>Step 7</b>		
4	<b>Students</b>	<b>Random #s</b>	<b>How to Get This</b>			<b>Copy, Paste Special, Values</b>	<b>Cut and Paste Names</b>	<b>Sort Rows G and H by G</b>	<b>Copy and Paste Names Multiple Times</b>		
5	George	0.9518514	=RAND()			0.0716418	Martha J.		Martha J.	George	
6	John A.	0.77777161	=RAND()			0.095677983	Rachel		Rachel	Martin	
7	Thomas	0.60826007	=RAND()			0.138700278	James Ma.		James Ma.	John A.	
8	James Ma.	0.90341924	=RAND()			0.214387623	Letitia		Letitia	John T.	
9	James Mo.	0.32952521	=RAND()			0.323829614	Dolley		Dolley	James Ma.	
10	John Q.	0.96045004	=RAND()			0.359272727	Martha		Martha	Abigail	
11	Andrew	0.31493467	=RAND()			0.442025695	Abigail		Abigail	Letitia	
12	Martin	0.92425871	=RAND()			0.466787082	Anna		Anna	Louisa	
13	William	0.73493561	=RAND()			0.528455018	James Mo.	Notice	James Mo.	John Q.	
14	John T.	0.15505011	=RAND()			0.62184587	George	names are	George	Andrew	
15	Martha	0.84555049	=RAND()			0.646390119	Elizabeth	in a new	Elizabeth	Martha	
16	Abigail	0.73586745	=RAND()			0.692919387	John A.	order	John A.	William	
17	Martha J.	0.69305599	=RAND()			0.716169178	William		William	Rachel	
18	Dolley	0.35218914	=RAND()			0.827208629	John T.		John T.	Hanna	
19	Elizabeth	0.77005124	=RAND()			0.841218657	Louisa		Louisa	Thomas	
20	Louisa	0.10487654	=RAND()			0.894774526	Martin		Martin	Dolley	
21	Rachel	0.89551332	=RAND()			0.910829139	Thomas		Thomas	Anna	
22	Hanna	0.7354602	=RAND()			0.976488135	Andrew		Andrew	Martha J.	
23	Anna	0.0331698	=RAND()			0.986570211	Hanna		Hanna	Elizabeth	
24	Letitia	0.62938316	=RAND()			0.986794946	John Q.		John Q.	James Mo.	
25											
26											
27	Generate with RAND() command			You see, these numbers have already changed				I've divided the lists into groups of 4			