

Introduction to the QEP in Critical Thinking
Faculty Workshop 2008
Bethel College
Carl Seaquist

In Broken Images

He is quick, thinking in clear images;
I am slow, thinking in broken images.

He becomes dull, trusting to his clear images;
I become sharp, mistrusting my broken images.

Trusting his images, he assumes their relevance;
Mistrusting my images, I question their relevance.

Assuming their relevance, he assumes the fact;
Questioning their relevance, I question the fact.

When the fact fails him, he questions his senses;
When the fact fails me, I approve my senses.

He continues quick and dull in his clear images;
I continue slow and sharp in my broken images.

He in a new confusion of his understanding;
I in a new understanding of my confusion.

Robert Graves

What is a QEP?

“The Quality Enhancement Plan (QEP) is a document developed by the institution that describes a course of action for institutional improvement crucial to enhancing educational quality that is directly related to student learning. The QEP is based upon a comprehensive analysis of the effectiveness of the institution in supporting student learning and accomplishing the mission of the institution.”

Handbook for Reaffirmation of Accreditation, Southern Association of Colleges and Schools, p. 5

Critical Thinking is Bethel's QEP

Instruction in critical thinking will be targeted in every stage of the undergraduate program, traditional and Educational Outreach. Every division will be involved, and best practices in critical thinking will be widely disseminated.

QEP Schedule in a Nutshell

2006-2007	Orientation of leadership teams, June 2006
2007-2008	Off-Sight Review conducted
2008-2009	On-Sight Review conducted, early 2008 CT in COE 101
2009-2010	CT in Common Core
2010-2011	CT in Program Core and Major courses
2011-2012	Graduating seniors took CAT in Fall, 2008: first pre-post comparisons possible Implementation continues . . .

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.

What Critical Thinking is Not

A subject matter (e.g., informal logic)

What Critical Thinking is

A skill, or rather a bundle of subskills
But which ones? . . .

Workshops schedules, handouts, and slideshows are available online at:

<http://seaquist.us/ct/handouts.htm>

Bethel's Definition

A) analyze information in an objective manner

2, 3, 5, 6, 7, 8, 9, 10, 11

B) assess and reconstruct information in an objective manner

3, 5, 6, 7, 9, 10, 11

C) view new concepts and ideas with an open mind

2, 3, 4, 5, 6, 7, 8, 9, 10, 11

D) recognize external and internal biases

1, 2, 4, 5, 8, 9, 10

E) discern both strengths and weaknesses of information

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

F) use information in an effective and ethical manner on a consistent basis

CAT Categories	CAT Skills	Quantitative?	Definition
Evaluate Information	1) separate factual information from inferences		D, E
	2) interpret numerical relationships in graphs	quantitative	A, C, D, E
	3) understand limits of correlational data	quantitative	A, B, C, E
	4) identify inappropriate conclusions		C, D, E
Evaluate Ideas and Points of View	5) identify and evaluate evidence for a theory		A, B, C, D, E
	6) identify new information that supports or contradicts a hypothesis		A, B, C, E
	7) explain how new information can change a problem		A, B, C, E
Learning and Problem Solving	8) separate relevant from irrelevant information		A, C, D, E
	9) integrate information to solve problems		A, B, C, D, E
	10) learn and apply new information		A, B, C, D, E
	11) use mathematical skills to solve real-world problems	quantitative	A, B, C, E
Communication	12) communicate ideas effectively		D
[not tested on CAT]	[not tested on CAT]		F

Category *	MAPP Reading/Critical Thinking test	CAT Skills
Reading for Explicit Content	(i) understanding meaning of words in the context of a reading passage	
	(II) recognize factual material explicitly presented in a reading passage	
	(III) discern the main idea of a passage	
	(IV) identify accurate summaries of a passage or section of a passage	
Integration of Material	(V) synthesize material from different sections of a passage	integrate information to solve problems
Reasoning	(VI) recognize valid inferences from material in a passage	separate factual information from inferences
	(VII) recognize flaws and inconsistencies in an argument	identify inappropriate conclusions
Use of Evidence	(VIII) evaluate hypotheses for consistency with known facts	identify and evaluate evidence for a theory
	(IX) determine relevance of information for evaluating an argument or conclusion	identify new information that supports or contradicts a hypothesis
	(X) evaluate data for consistency with known facts, hypotheses, or methods	
		separate relevant from irrelevant information
		learn and apply new information
		explain how new information can change a problem
Causation	(XI) evaluate competing causal explanations	
	(XII) evaluate appropriateness of procedures for investigating a question of causation	
Art	(XIII) understand and interpret figurative language in a passage	
	(XIV) determine whether an artistic interpretation is supported by evidence in the work	
	(XV) recognize salient features or themes in a work of art	
Quantitative Reasoning	<i>the MAPP has a separate section of math questions</i>	interpret numerical relationships in graphs
		understand limits of correlational data
		use mathematical skills to solve real-world problems
Writing		communicate ideas effectively

* Note that I have generated these categories and sorted the lists according to them.

Overview of CAT Test

short-answer, graded locally by faculty

15 questions addressing 12 critical thinking skills

will be administered to freshmen in COE 101 and seniors in COE 401, EDU 439, ENG 339, MOD 460

Suggestions from CAT Developers for Preparing Students for CAT

“We encourage faculty to think about developing their own discipline specific analogs to the CAT questions and using those analogs to involve students in active learning experiences that help them improve their critical thinking skills. If those analogs are somehow incorporated into student assessment in their classes, they will be most valuable.”

“After faculty have had an opportunity to score the test, it would be beneficial to have them work in groups to identify potential analogs to the CAT questions that could be used in their courses as opportunities to develop students’ critical thinking. . . . students in an environmental engineering or biology class could evaluate claims by experts that global warming is not occurring. . . . in a sociology or psychology class students could explore the relationship between shoe size and intelligence. . . . if students must use additional resources to solve problems, provide opportunities to differentiate relevant from irrelevant material as they search for additional information needed to solve the problem.”

General principles to follow in constructing activities:

- Use active learning methods
- Select activities and topics that will interest students
- Use collaborative learning methods

Recommended types of exercises:

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

Questions for Final Exam Essays

Islam Section

(1) Explain how El-Gamal uses the six-commodities tradition and the Kaybar date tradition to understand what “riba” means. Things to include: (a) You should discuss his view of riba; (b) you should explain the method/approach he takes to interpretation, and why he does this.

(2) How do Abang Kerna and Tengku Asaluddin differ in their interpretation of Koran 61:13, as discussed in Bowen’s *Muslims through Discourse*? How does Bowen interpret this difference? In other words, how does he fit this debate into the larger context of, e.g., his traditionalist/modernist distinction, his interest in discourse, his views of Islam in/away from the traditional centers of Moslem culture.

(3) Discuss the modernity/fundamentalism debate in Islam. Explain the terms and why this is an important dichotomy especially in the study of Islam. Give precise examples from two of the readings in Moaddel and Talattof in illustration of your claims.

Comprehensive/Cumulative Section

(4) How do the stories of Shastri Brahm and Asta Auliya, as told to Gottschalk in the town of Arampur, help us to understand South Asian communalism? Make sure you explain what communalism is, and pay attention to the religious commitments of the various informants whose versions of the story you address. It is probably easiest to simply adopt Gottschalk’s interpretation of the evidence, though you are under no obligation to do so.

Re: Final Exam Essay #1

In my class on Comparative Religion, I introduced a short reading on Islamic finance to achieve several goals:

- Illustrate how to read primary sources
- Illustrate the uses put to sacred texts within a religious tradition
- Get students thinking of the practical, day-to-day implications of religious commitment
- To illustrate the role of ethical considerations in Islamic law
- To cover a topic that students would be unlikely to encounter if they went on to the upper-level course in Islam
- To reach out to professional students

I had also addressed all of these topics in one or another reading in the units on Christianity and Hinduism so that readings in different parts of the course spoke to one another.

We had read two hadith (account of the life of the Prophet) in Mahmoud El-Gamal's *Islamic Finance: Law, Economics, and Practice*.

One was quoted in direct translation, because the form of the text led itself to ambiguity, and part of the job of interpretation was simply to make sense of the form:

Gold for gold, silver for silver, wheat for wheat, barley for barley, dates for dates, and salt for salt, like for like, hand to hand, and any increase is *riba*.

Riba is a kind of transaction that is prohibited. El-Gamal quotes the passage in order to get at what precisely constitutes *riba* (thus it is the one word that is not translated). To illustrate the different ways the passage has been understood, he adds:

Non-Zahiri jurists agreed that those six commodities were given only as examples. Hanafi jurists extended the prohibition to all fungible goods measured by weight or volume, whereas Shafi'i and Maliki jurists restricted it to monetary commodities (gold and silver) and storable foodstuffs.

The other was told in paraphrase by El-Gamal:

Bilal and Abu Hurayyah narrated that a man employed in Khaybar brought the prophet some high-quality dates. The Prophet inquired if all Khaybar dates were similar to that kind, and the man told him that they traded two or three volumes of lower-quality dates for one volume of higher-quality ones. The Prophet told him – angrily – never to do that again, but to sell lower-quality dates and use their proceeds to buy the higher-quality ones.

I believe that the concepts, though unfamiliar, should be quite accessible to undergraduates. Success on the exam question does not require original analysis, but rather thoughtful reading and understanding how El-Gamal gets his interpretation from the sources he provides to his reader: simply memorizing his interpretation is not enough by itself.

Re: Final Exam Essay #4

I assigned a short reading from the ethnography *Beyond Hindu and Muslim: Multiple Identity Narratives from Village India* by Peter Gottschalk to illustrate the concept of communalism and to tie together some themes from earlier units on Hinduism and Islam.

Gottschalk collected local stories relating to two historical figures (the Hindu Shastri Brahm, and the Moslem Sufi Asta Auliya) to whom there are shrines in the village of Arampur.

He notes who tells each story, and the religion of the narrator. Gottschalk concludes:

In summary, Surya Tiwari (and most other Arampur residents) narrated a memory about how Shastri [Brahm] came to be a [powerful spirit] that demonstrates the efficacy of his powers for or against individuals without regard for their religious identity, *despite the obvious concern on the part of the narrator to identify them in this way* .

Thus he illustrates with his fieldwork a phenomenon that is now widely recognized: that sectarian conflicts between Hindus and Moslems in India were exacerbated under the British Raj. The historical stories that people in Arampur tell contain conflicts, but these are not communal conflicts but rather conflicts between individuals. But narrators interpret communal antagonisms into the stories they tell, even though they do not update the stories to bring this out.

To get students to see this I encouraged them to map out the stories so that they could see the similarities between them, for example:

Story #:	1	2	3
Narrator:	Usman Khan	Salman Alam	Surya Tiwari
Religion:	Moslem	Moslem	Hindu
Subject:	Shastri Brahm	Asta Auliya	Shastri Brahm
Religion:	Hindu	Moslem	Hindu
	Shastri Brahm was Raja Vicitra's guru.	...	SB was RV's priest and chief minister.
	SB's house was tall & a light shone from it.	...	RV was without an heir.
		...	SB suggested he take a second wife.
		...	The rani convinces the king to be against SB.
		...	
	The rani asked the Raja to destroy it.	...	His house ended up being damaged.
	He did so and SB began to fast.	...	
	He died by his own hand.	...	
	etc.	...	etc.

Again, the focus is on teaching students reading skills and helping them see how an author derives his conclusions from particular evidence rather than teaching them to draw independent conclusions.

Sample Exercises from a Variety of Courses

Author: Susan Silbey

University: MIT

Department: Women's Studies

Course: Identity and Difference

Source: <http://ocw.mit.edu/OcwWeb/Anthropology/21A-218JIdentity-and-DifferenceFall2002/Assignments/index.htm>

Having read and discussed (I hope) several hundred pages of social scientific research on identities, differences, and stigmas, it is time to incorporate some of what you have learned into your paper on *The Human Stain*. I would like you to write a paper arguing that:

(1) identity is a product of social interaction, highly contested, and subject to repeated construction over the life course, or

(2) that individual human identity is given to each individual and can be changed not at all or only with enormous effort.

You are to use the readings assigned for this course, plus the lecture materials to support your argument. You are to use the characters (one or more, not necessarily all) and the plot of *The Human Stain* by Philip Roth to demonstrate and elaborate the elements of your argument. In other words, I would like you to produce an interpretation of Roth's novel.

Author: Thomas W. Rishel

Source: *Using Writing to Teach Mathematics*, Andrew Sterrett, ed., Mathematical Association of America [1990].

In 1985, I signed on to Anil Nerode's Exxon grant at Cornell University to design a geometry course for students who had no college mathematics. . . . In the main, I wanted to show that "what one knows" is often "what one assumes," and I wanted these assumptions brought out clearly.

My first invention, and maybe my best, was the following:

Go the Cornell Arts Quad. Measure, by any method you want, the height of McGraw Tower, the tallest building on the Quad. Write up your solution on one sheet of paper as if it were a lab report. Use any diagrams you think appropriate to help explain your work.

When the project was done, we had a discussion. We classified methods of measurement by type: Pythagorean; similar triangles; estimation; "direct" measurement; nonmathematical models. Then we discussed reasons for possible errors in each method. At this point someone usually began to ask what the "real answer" might be. I would often counter the question with one of my own: "Isn't it yours?"

Department: Home Economics

University: Cal State, Sacramento

Source: *California Teacher Preparation for Instruction in Critical Thinking: Research Findings and Policy Recommendations*, 1997, p. 35.

There is an example of a consumer service project, in which “the student is asked to seek information on how to assess a particular consumer service and use that information in designing a questionnaire designed for gathering information on which to base an assessment of the service.”

Note: This could serve as the beginning of a series of related exercises with critical thinking content: for example, (a) ask students to write a short paper explaining why they chose the particular product and why they designed the questionnaire as they did, (b) have them share questionnaires and papers so they can learn each other’s reasoning, then (c) ask them to redesign their questionnaires, explaining in accompanying notes the reasons for their changes and what inspiration they drew from each other; or (a) have students present their questionnaires to the class, and explain their reasoning, then (b) have them rewrite their questionnaires as above. -- CAS

Department: Teacher Education Program

University: California Lutheran University, School of Education

Source: *California Teacher Preparation for Instruction in Critical Thinking: Research Findings and Policy Recommendations*, 1997, pp. 35-6.

“In all components of methods and student teaching, each assignment carries a requirement for a critical thinking exercise. This may consist of a paragraph or two written by the student as a self-evaluation or an oral processing with feedback.”

So every time the student teacher designs and presents a unit to the class, he is then asked to reflect on the exercise, to encourage students to learn from their own experiences in the classroom. -- CAS

Self-reflection is also included in a multi-phase strategy for developing and assessing lessons: “Self-Reflection: (What was the) most important part of the plan? How did it go? What was strong? What would I change? What did I learn from the experience?”

Statistics from the *Wall Street Journal*, August 7, 2008, p. B1

Auto makers account for more than 12% of all ad spending in the country – more than any other single industry.

General Motors is seeking a 20% cut in fees paid to advertising agencies this year and next.

Ford Motor's U.S. ad spending for the first five months dropped 37%, and Chrysler's dropped 31%, not including search advertising (*presumably compared to the same period last year*).

Local TV stations get about 28% of their ad revenue, and local papers get about 18%, from the automotive sector.

Interpublic's DraftFCB in 2000 had profit margins of around 20% for its work with Chrysler. Now margins on auto accounts are in the 8% to 12% range. (After years of such work, agencies have created economies of scale for automotive advertising.)

Ad Traffic (chart)

Share of U.S. advertising revenue from the automobile industry, by selected media.

Local TV stations	27.6
Local Newspapers	18.1
Local Radio	14.7
Network Radio	11.9
Broadcast TV	11.7
National newspapers	8.9
U.S. Internet	7.7
Cable TV	6.6
Total U.S.	12.3 (<i>numerical average is 13.4, so this is presumably weighted</i>)

Some Other Statistics

From: finance.yahoo.com, 8-11-08

	<u>Market Cap</u>	<u>Revenue (ttm)</u>	<u>Profit Margin (ttm)</u>
General Motors	\$ 5.72 billion	\$ 171.86 billion	-33.99 %
Ford	\$ 11.68 billion	\$ 163.16 billion	- 7.21 %
Coca Cola	\$ 128.33 billion	\$ 31.45 billion	18.41 %
Microsoft	\$ 256.76 billion	\$ 60.42 billion	29.26 %

From: Bureau of Economic Analysis, for 2007

GDP (U.S.) \$13,807.5 billion

Critical Thinking (CT) Workshops
Bethel College
Fall 2008

A series of workshops will be held throughout the Fall semester on methods for introducing critical thinking instruction into courses across the curriculum. All faculty are welcome to attend.

All workshops meet in the **Library, room 109**. They should run about 50 minutes each.

Schedule

Workshop #1

September 4 (Thursday), 11 am

Topic: Instructional Strategies for Teaching Critical Thinking

Workshop #2

September 16 (Tuesday), 3 pm

Topic: Critical Writing, Critical Reading, Critical Thinking

Workshop #3

September 30 (Tuesday), 3 pm

Topic: Teaching Argument and Informal Logic

Workshop #4

October 16 (Thursday), 11 am

Topic: Quantitative Reasoning, Scientific Reasoning, and Critical Thinking

Workshop #5

October 30 (Thursday), 11 am

Topic: Ethics, Social Action, and Critical Thinking

Workshops will be run by Carl Seaquist, Director of QEP (Critical Thinking) at Bethel College. Comments or questions may be referred to him at:

seaquistc@bethel-college.edu

(731) 352-4215

Faculty are encouraged to contact Carl for individual consultations, or to schedule workshops on special topics for academic divisions or other campus groups.