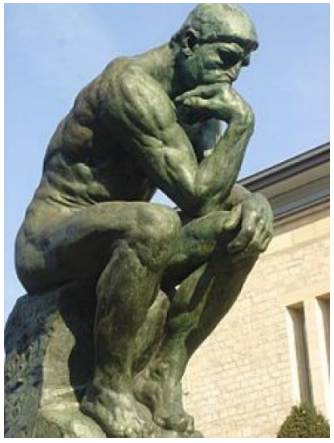
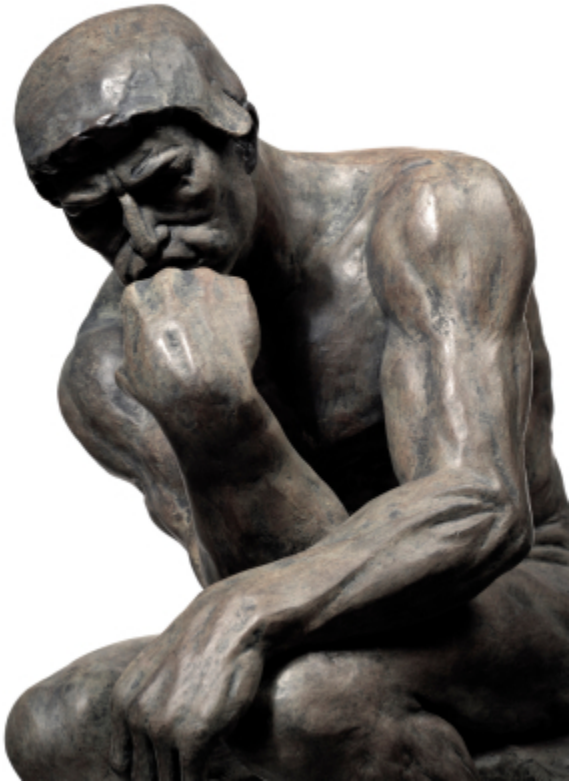
Critical Thinking in Writing:

A Power Point Presentation of
John Bean's *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom, 2nd edition*
(Jossey-Bass, 2011)



For Chaffee, critical thinkers do the following:

- Carefully analyze and critique the "lenses" through which they perceive and judge the world (their own assumptions and biases) in order to develop the most accurate beliefs possible.
- View situations from multiple perspectives to develop in-depth, informed understanding.
- Support viewpoints with sound reasoning and evidence to arrive at thoughtful, substantiated conclusions.
- Synthesize information into conclusions that they are willing to modify based on new insight. (p. 35)



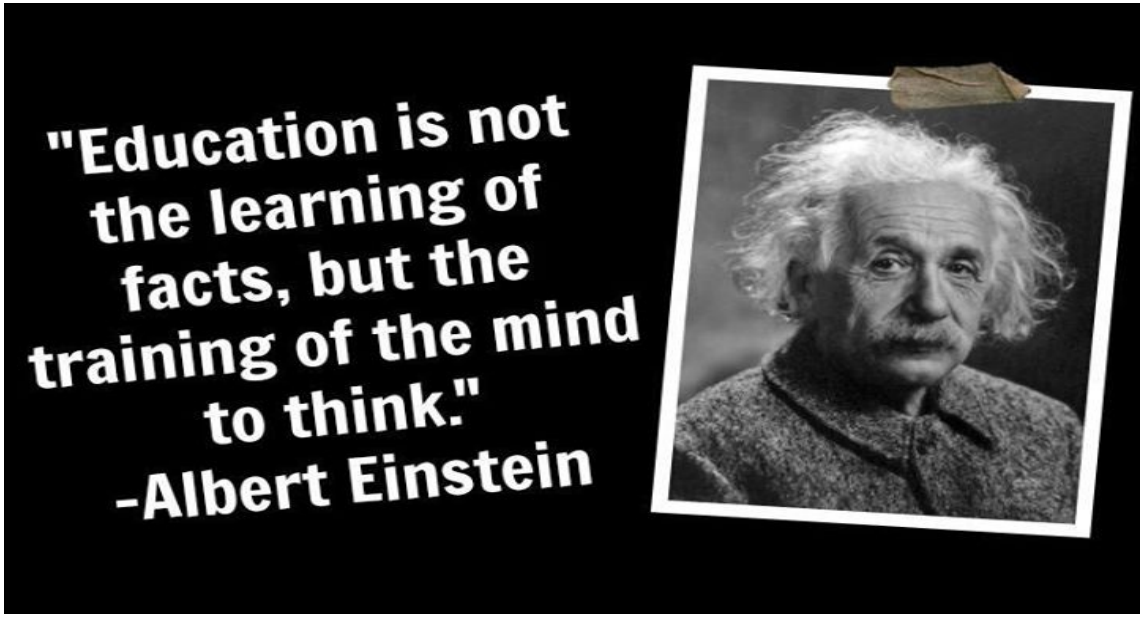
[from *The Thinker's Way* by John Chaffee, Boston: Little, Brown, 1998]

PAUL AND ELDER'S DESCRIPTION OF A SKILLED CRITICAL THINKER

Critical thinkers do the following:

- Raise and formulate vital questions and problems
- Come to well-reasoned conclusions, testing them against relevant criteria
- Analyze and critique multiple perspectives (including their own), recognizing their limitations and contributions
- Communicate with others to synthesize solutions to complex problems
- Commit to self-directed, self-corrective thinking
- Recognize the responsibility to transcend one's own perspective

[From *A Miniature Guide to Critical Thinking: Concepts and Tools*
by Richard Paul and Linda Elder, The Foundation for Critical Thinking, 2001]

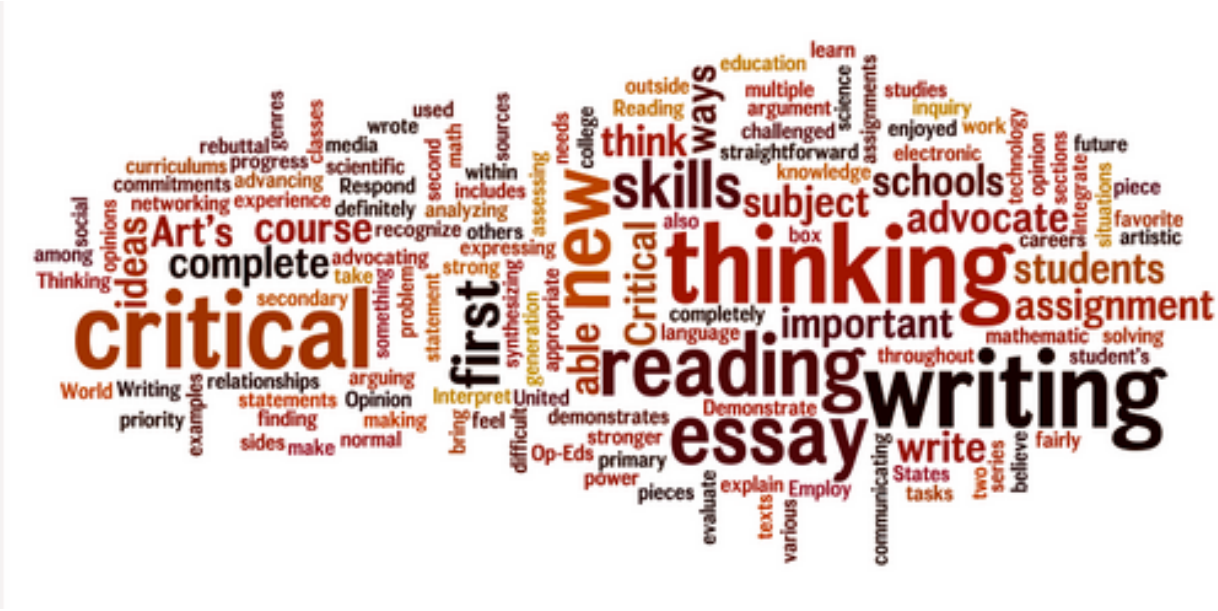


Studies on Critical Thinking in Writing:

- Nobel Prize winner Daniel Kahneman, 2011:
  - Two types of thinking: automatic thinking and reflective thinking

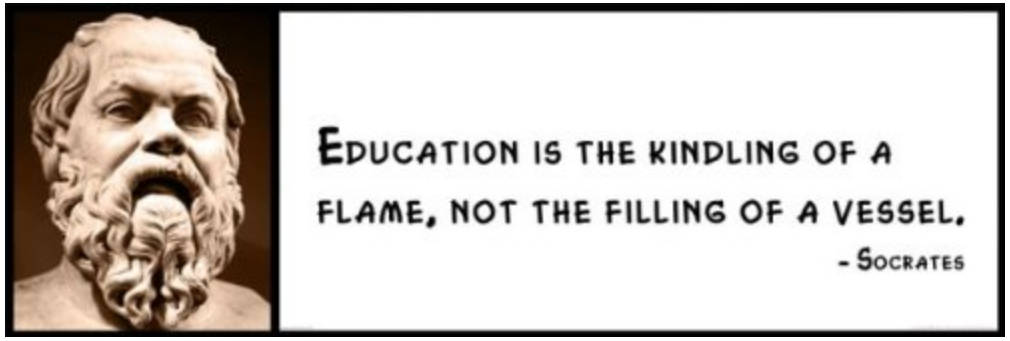
- Quitadamo & Kurtz, 2007:
  - Tested multiple choice quiz vs analytical essay on 310 college biology students.

- 2009 Research by NSSE (National Survey of Student Engagement) and WPA (Council of Writing Program Administrators) in U. of Indiana



SOME Incoming Students' Views of Learning and Writing:

- Learning = the acquisition of information and correct answers
- Learning = the filling of "empty vessels"
- Writing= a product that demonstrates what you know
- Writing= a way to convey bits of information OR to convey instant reactions



Problem-Based Assignments

Myths about Writing in Content Areas:

- Emphasizing writing will take away time from content
- Writing Assignments are unsuitable for some courses
- Adding writing assignments increases time spent grading
- Expertise in writing and grammar is required

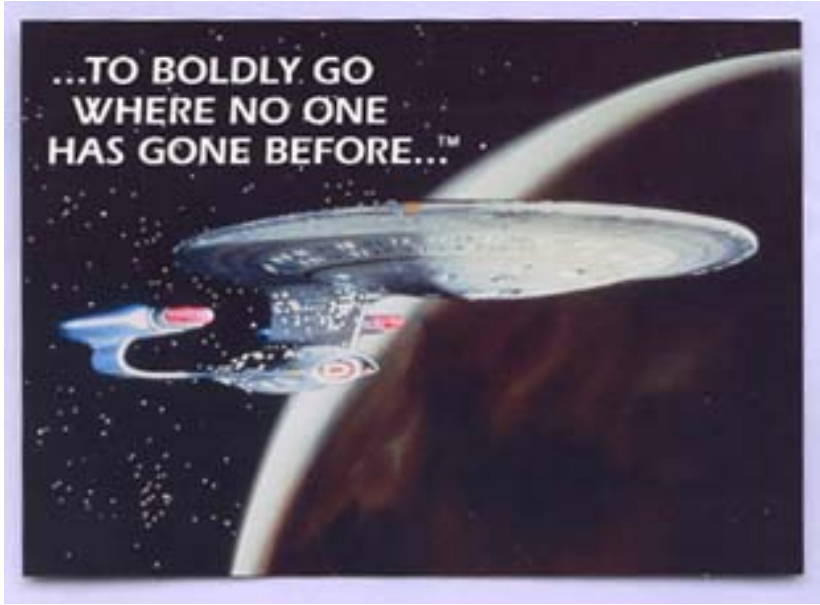
Informal, Exploratory Writing:

In-Class:

- Start of Class: Writing to Probe a Subject
- Mid-Class: Re-Focusing / Cool-Off Writing
- Mid-Class: Ask Questions / Express Confusion
- End of Class: Writing to Sum Up

Out-of-Class:

- Message Board Questions and Answers
- Connections to Other Classes
- Clarification Activity
- Double-Entry Notebook
- Contemporary Issues
- Imaginative Dialogue
- Bio-Poem
- Metaphor Game/Extended Analogy
- Practice Essay Exams
- Thesis Statement Writing
- Paragraph Templates



Formal Writing:

Microthemes (Short Formal Writing-To-Learn Assignments):

- Point of View Poem or Letter
- Argument Dialogue
- Alternate Ending
- Interview
- Learning Autobiography
- Explanation to a New Learner
- Role-Playing and “What If” Situations
- Summaries of Reading or Lecture
- Cases and Simulations

Dear Dr. Science:

You've got to help me settle this argument I am having with my girlfriend. We were watching a baseball game several weeks ago when this guy hit a high pop-up straight over the catcher's head. When it finally came down, the catcher caught it standing on home plate. Well, my girlfriend told me that when the ball stopped in midair just before it started back down, its velocity was zero, but its acceleration was not zero. I said she was stupid. If something isn't moving at all, how could it have any acceleration? Ever since then, she has been making a big deal out of this and won't let me kiss her. I love her, but I don't think we can get back together until we settle this argument. We checked some physics books, but they weren't very clear. We agreed that I would write to you and let you settle the argument. But, Dr. Science, don't just tell us the answer. You've got to explain it so we both understand because my girlfriend is really dogmatic. She said she wouldn't even trust Einstein unless he could explain himself clearly.

Sincerely,

Baseball Blues

Student A's Microtheme

Acceleration is defined as the ratio of the change in velocity to the time over which this change occurs. When the pop-up left the hitter's bat it had a certain acceleration in the upward direction. This acceleration soon became deceleration (a decrease in speed with time) as the downward pull of the earth became strong enough to decrease upward acceleration to 0. This force is called gravity and by definition accelerates a free falling body at 32 ft./sec.^{2} in the downward direction. When the ball paused at the peak of its flight, before beginning its descent, the upward acceleration and the downward acceleration were equal, even though the ball was stationary.

Student B's Microtheme

It makes me sad to hear that you have lost your girlfriend over such a trivial problem. I have some good news for you, though. You are right. An object cannot have 0 velocity and have acceleration too. I hope that with the arguments I lay forth in the next few paragraphs you two can reconciliate.

First, velocity is defined as how far an object moves during a certain time. If an object is moving then, in any direction, it has velocity. An airplane is a good example of this. It flies at a certain velocity such as 160 miles per hour, which means it covers 160 miles every hour it is in the air. Next we need a definition of acceleration. This is simply the change in velocity over a certain period of time. If you have an object that is moving at a constant velocity, and covers the same amount of distance during each time period, then it cannot have any change in velocity and thus any acceleration. Going back to the airplane we see acceleration when it speeds up or slows down.

Now we can use these two above concepts to give an answer to your question. If you have an object having no velocity it can have no change in that velocity, thus it cannot be accelerating. If this is still not clear think of the airplane sitting in its hangar. It has no velocity just sitting there, right? Therefore it cannot be accelerating or it would run through the side of the building! The baseball is the same way. I hope that the explanation above will help your girlfriend to see the light.

Student C's Microtheme

Ask your girlfriend's forgiveness because she is absolutely right. An everyday definition of acceleration means speeding up. But the scientific meaning is more precise. It means the rate at which *speed* or *direction* changes over a certain period of time—two things really. Thus it is indeed possible for the ball to still be accelerating even when it has zero velocity. If the baseball had no acceleration when it stopped in midair, it would float in the air where it stopped forever. A baseball can accelerate in either of two ways. It can change its speed or it can change its direction of travel. If it does either or both of these things over a period of time, it has accelerated. As the baseball stopped in midair its speed—or velocity—became zero. Yet the acceleration was not zero because, like a stretched out spring, gravity was pulling at it. As you noticed, it soon turned around from going up and came plummeting straight down toward the catcher's mitt. During any given interval of time, it was changing direction or speed (velocity). Because of this, its acceleration (a measurement taken over a period of time) was never zero.

Formal Writing (contn'd):

Open Form (Not Thesis-Governed)

- Quest for a Solution
- Learning Autobiography
- Personal Reflection

Closed Form (Thesis-Governed)

Macrothemes (Long Formal Writing Assignments)

- Present a Proposition (Thesis) for Students to Defend or Refute
- "Best Solution" Answer
- Analysis of Raw Data
- "Strong Response" to Scholarly Articles

Assignment Option 1

Write an eight- to ten-page research paper on therapeutic touch. Follow APA conventions for documentation.

Assignment Option 2

You are a staff nurse at a large urban hospital. Recently the hospital became embroiled in a major controversy when several nurses were discovered to be practicing TT on patients without the permission or knowledge of their supervisors or of attending physicians. The hospital governing board reprimanded the nurses and issued a general statement forbidding the practice of TT, which they called "non-scientific quackery." Research the professional literature on TT, looking especially for evidence-based studies. Then write a four- to five-page argument, addressed to the hospital governing board, supporting or attacking the board's decision to forbid the practice of TT. Support your position with reasons and evidence based on the professional literature.

Assignment Option 3

Assume that you and several colleagues seek grant funding to do a controlled research study on the efficacy of TT for reducing anxiety and pain in surgery patients. Research the current professional literature on TT and then write the "review of the literature" section of your grant proposal.

Assignment Option 4

Do a literature search to find several empirical studies of TT. Choose one of these studies for this two- to three-page paper. Write a critical review of your selected article in which you (1) summarize the purpose, method, and results of the study (in your own words—don't copy the abstract) and (2) write a critical review of the article in which you analyze the extent to which it provides or doesn't provide a scientific basis for regarding TT as evidence-based medicine.

Assignment Option 5

Should schools of nursing and major nursing organizations give their imprimatur to TT? In some quarters, nurses are being ridiculed for their attraction to "new age mysticism." In other quarters, nurses are praised for their openness to modalities of healing other than Western science. For this assignment write an eight- to ten-page exploratory research paper that describes chronologically your own search for a personal answer to this question. The paper should start with a reflection on where you stood on this issue before you began your research, and why. (Being confused or uncertain is OK.) Then write a first-person, reflective narrative of your thinking process as you investigated your question by researching the professional literature, talking with classmates, and drawing on your own personal experiences, memories, and observations. Your narrative should include a summary of at least three professional articles, followed by your own intellectual wrestling with that article's ideas. By the end of your essay, sum up how your ideas evolved during your process of research and reflection. You will be rewarded for the quality of your exploration and thinking processes. In other words, your goal is not to take a stand on this issue, but to report on your process of wrestling with it.

In the graveyard scene of *Hamlet*, Shakespeare calls to mind the medieval *memento mori* ("remember thy death") philosophic tradition by having Hamlet contemplate the meaning of a human skull. But Shakespeare alters his sources by adding the clownish gravediggers. How does the presence of the gravediggers influence the way you read this scene and perhaps the play itself? Why did Shakespeare add the gravediggers? Do you think "comic relief" is an adequate explanation? Do you think the gravediggers are funny? Absurd? Blasphemous? How does Hamlet's attitude toward the gravediggers affect the scene? Do you think it is appropriate to sing while digging a grave? You might also want to think about the jokes they tell. Do these jokes comment on themes in the play? Do you think that Yorick was more like the gravediggers or more like Hamlet? Does Hamlet seem like a Christian in this scene or something else? You may want to do some research to help you with this topic, but you don't need to. If you do use research be sure to cite your sources.

In the graveyard scene of *Hamlet*, Shakespeare calls to mind the medieval *memento mori* ("remember thy death") philosophic tradition by having Hamlet contemplate the meaning of a human skull. But Shakespeare alters his sources by adding the clownish gravediggers. What do you think is the function of the gravediggers in this scene? Imagine readers who believe in the "comic relief" theory: "The function of the gravediggers is to supply comic relief. When we laugh at the grave diggers, we are temporarily relieving some of the tragic tension that has been building up." Your goal is to show these readers that the gravediggers serve a deeper, more complex function than comic relief. But what is that function? We'll be debating this question in class, so you'll have plenty of chances to generate ideas.

Tips for Designing Effective Critical Thinking/Writing Assignments:

- Reverse Engineer/Scaffold
- Decide which thinking/writing processes you want to encourage
- Identify Steps
- Have Clear Expectations of Writing (Rubric)
- Give Students a “RAFT” and a “TIP”:
  - **R**ole (or purpose)
  - **A**udience
  - **F**ormat (or genre)
  - **T**ask

  - **Ta**sk as
  - **I**ntriguing
  - **P**roblem

Avoiding a Thesis

- “And Then” Writing
  - Chronological Organization
  - Plot Summary
  - Historical Summary
  - Literature Review

- “All About” Writing
  - Reports
  - “Library Papers”
  - Traditional “Term Papers”

- “Data Dump” Writing
  - Patchwork of source materials
  - “Cut and Paste” approach
  - No organizational frame

From “Professor” to “Critical Thinking Coach”

Becoming a “Critical Thinking Coach”

- Create Cognitive Dissonance in Students
- Present Knowledge as Dialogic, not merely Informational
- Teach Academic “Moves” and Genres
- Teach Active Problem-Solving via Dialogue & Writing
- Teach Revision
- Teach “Rhetorical Thinking”