

# Critical Inquiry in the EAP writing classroom

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## The importance of critique

- \* Evaluation is a central literate activity across all disciplines.
- \* Critiques provide evidence of critical thinking and engagement with a body of material.
- \* Critiques are not exclusive to literature, film, and art.
- \* All disciplines expect students to be able to critique.
  - Engineering
  - Physics
  - Biology
  - Medicine/Nursing

## Sample Critique Assignment

Physics 142  
How Can We See Inside Ourselves?  
Article Critique Assignment

## Physics 142 Assignment

This module explores the fundamental concepts from physics needed to understand how we can use energy to see what is inside of our bodies.

Ionizing radiation and radioactive materials involve complex ideas, and they are central to questions related to medicine, health, the environment, energy, public policy and other issues. The public's understanding of the subtleties surrounding these issues, especially those involved with evaluating risks and benefits, often leaves room for improvement. As a member of the public, and a person with a future in a science-related career, **it will be very helpful if you can develop your abilities to deal rationally with these types of issues.**

Critique an article that involves some aspect of ionizing radiation and/or radioactive materials as they relate to one or more of the sorts of questions mentioned above. You may find your article in the mass media (newspapers or magazines) or a scholarly journal on the internet. You must attach a copy of the article with your paper to receive credit.

## What is critical thinking?

- \*A two-step process
    - Critical reasoning
  - \*Understanding the text or talk well enough to evaluate
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-Creative reasoning

\* Creating a *new* logically defensible text (spoken or written) that is based on the original

\*More than summarizing

\*More than indicating likes and dislikes

\*More than agreeing or disagreeing

\*“Knowledge-telling” is not enough.

\*Knowledge transformation is the goal.

-Create new insights and ideas using the work of others as a starting point.

-Move from “What does the text say” to “What is the text trying to say and does it succeed in doing so” .

### **Typical Critique Assignment**

\* Not a fixed text type, but there are common elements.

- The source articles often do not simply present accepted ideas.

- The source articles often challenge accepted views.

- The source articles may explore old ideas in a new context.

\* Goal

-To encourage students to demonstrate that they have integrated disciplinary knowledge into their ways of thinking

-To encourage students to *apply* what they have learned previously (as possible fact)

-To encourage students to develop their own observations.

### **Another Sample Assignment**

\* Critique Assignment from First Year Biology

\* The critique assignment is intended to teach you how to effectively read the reports of experimental research published in physiological journals. The intent of the rigid structure of the assignment is to teach you to do what I do when I read, namely to get in and out in the shortest possible time with answers to a few basic questions: What were these researchers trying to find out? What did they do? What was the outcome?

### **Assignment from Biology**

\* Choose a PRIMARY report of an experimental study from a scientific journal. The article must deal with some aspect of PHYSIOLOGY (any animal, not just humans, but no bacteria or plants or fungi, etc.), and must be **NO MORE THAN ONE YEAR OLD**. If you are in doubt, ask.

\* Read the article carefully, and keep reading it and consulting with me until you understand it. Then write the following:

I. Citation of the article in the following format:

Author. Year. Title of article. Name of Journal Volume (issue #): pages.

EXAMPLE: The citation below is a model. Imitate its format exactly.

Martin, Kathy. 1995. Patterns and Mechanisms for Age-dependent Reproduction and Survival in Birds. *American Zoologist* 35(4): 340-348.

II. What was the purpose of the study? That is, what was the author trying to find out? The best place to look for this information is near the end of the introduction.

III. How was the study done? Not the detailed procedures. In a few concise statements explain how the experiment was arranged and what was measured. Look in the Materials and Methods section for this.

IV. What was the answer to the question you stated above?

V. Write a brief discussion of the article FROM YOUR OWN POINT OF VIEW!! Try to relate the content of the article to your own experience, to the content of this course, to your own ideas, etc. DO NOT use this section as a way to summarize the article some more. I want to hear your thoughts, not those of the author.

### **Challenges**

\*Critiques are a hybrid act of literacy

- This is a complex task placing high demands on reading, thinking, and writing skills.
- Writers must first be readers.
- Readers must then be writers.

\*Students often must deal with a text from their own or another discipline

- Articles are a professional academic genre written for an audience of peers.
- Students are more familiar with textbook reading.
  - \* Textbooks present information as fact
  - \* Emphasis on reading and repeating

\*Students often must integrate information from multiple sources

- Lectures
- Class discussion and online discussion
- Textbooks
- Internet
- Personal experience, possibly but not likely

\* Students do not know what it means to critique

\* Students have many misconceptions.

\* Misconceptions that emerged from a survey at our university include:

- Critique and argumentation are the same.
- Critiquing is finding all of the weaknesses in a text.
- Critiquing is offering a personal opinion about the topic of the article.
- Critiquing is showing understanding.

- Critiquing is indicating likes and dislikes.
- \* Students do not know the vocabulary of assignments that should prompt them to critique.
- Analyze
- Examine
- Explore
- Discuss

### **Another Sample Assignment**

#### **ARTICLE REVIEW**

Analyze the following article:

Kramer, M.S., Barr, R.G., Dagenais, S. et al.. (2001). Pacifier use, early weaning and cry/fuss behavior: A randomized controlled trial. *Journal of the American Medical Association*, 280, 3, 322-326.

#### **Professor's Expectations?**

- (1) What is the problem this paper addresses? - research questions, hypotheses, etc.
- (2) Is the study of this problem 'worthwhile'? - clinical importance
- (3) Did the author employ an explicit theoretical/conceptual framework for this problem? Is it well described and appropriate for this study?
- (4) Literature review: is it concise, does it address the relevant issues, does it report relevant previous findings, does it support the importance of this study?
- (5) Methods:
  - 5.a. Sampling: What is the target population? What eligibility criteria were employed? What specific sampling procedures were used? Is the sampling plan appropriate? Is there subject attrition? What have the researchers done to deal with subject attrition?
  - 5.b. Research Design: Is it experimental, quasi-experimental, non-experimental? Cross-sectional or longitudinal? Methods for insuring equivalence of comparison groups, etc. , (Describe the design in detail, e.g., pre-test/post-rest design with X number of observations, etc.)
- (6) Statistical Analysis: What specific statistical analysis techniques were used/what type of measure is used to show the effects of the independent variable(s)? Are they appropriate in light of the measurement level of the variables involved?
 

Are they appropriate in light of the research design? Did the analysis take account of subject attrition? Do the tables focus on answering the primary research questions?
- (7) Briefly, summarize the results/empirical findings. Do they shed light on the questions?

(8) Discussion: Are the interpretations of the results consistent with the findings? Do they place the findings back into the context of the literature discussion and conceptual framework?

(9) Are any relevant shortcomings or limitations discussed? Are there shortcomings of the study that are NOT mentioned?

### **Underlying Challenges**

- \* Students may be aware of the need to evaluate and to support evaluations with disciplinary evidence.
- \* However, they are being asked to assume an unfamiliar writing persona, i.e., one of an authority.
- \* Many students feel they do not know enough to be critical.
  - Questioning the written word is difficult enough for native-speaker (NS) undergraduates
  - It is likely even more challenging for many non-native speakers (NNS), many of whom come from educational traditions in which absorbing and memorizing scholarly work—rather than evaluating it—is emphasized (Ballard, 1984).

### **What Can We Do?**

- \* Focus on reading to write
  - Begin with summarizing a text .
  - Make sure there is a goal in writing the summary.
    - \* Avoid assignments that simply instruct students to “summarize”.
    - \* Pose questions
    - \* Ask for a reaction
- \* The City of Ann Arbor is planning on banning cell phone use while driving and has asked for input from the community. According to the article, how dangerous is cell phone use while driving?
- \* Give support from the article for your response.
- \* What do you recommend that the city do? Explain your recommendation.
- \* Student success in reading to write depends on
  - having adequate background knowledge of the topic being dealt with (Mathison, 1996) and
  - having a useful set of evaluative criteria that can be applied to a text (Shepelak, et al., 1992).
- \* Center the critique unit around one research topic that is
  - accessible and,
  - ideally, interesting
- \* Provide evaluative criteria that students can understand.
- \* Help students develop writing skills--including the language of critique.

### ***Stage One—Understanding and Discussion***

- \* Students should read several short articles or texts that present different views on a single topic, including competing and previously-rejected ideas.

- \* The goal of this preliminary reading is for students to understand and acquire content, each author's purpose in writing, as well as the rhetorical aspects of the texts.

#### Group work

- \* Discuss
- \* Exchange opinions
- \* Realize that experts can and often do disagree
- \* Given disagreement, it is important to evaluate information and determine what makes sense
- \* Avoid being a sponge and instead
- \* Pan for gold
- \* Help students become aware of, and practice, the complex mental activities that characterize critical thinking.
- \* Provide questions to guide the thinking process.
- \* Help students move beyond comprehension and low-level reaction.

<b><i>Stage Two—Model Critical Thinking</i></b>
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1. Who is the audience?
2. What is the author's purpose?
3. What is the issue? (What question is being addressed?)
4. What conclusions does the author draw?
5. What kind of evidence or reasons does the author offer to support those conclusions?
  - a. How good is the evidence?
  - b. How sound is the logic?
  - c. What, if any, evidence was omitted?
6. What is the quality of the references?
7. How good is the study, if one is presented?
  - a. Was the sample size used in the study adequate?
  - b. Was the study properly carried out?
8. Are any key terms ambiguous?
  - a. Do some key terms have multiple meanings?
  - b. Is the author's position or conclusion reasonable in light of other possible meanings of the key terms?
9. Is the author's position valid based on the evidence?
10. What assumptions does the author make?
  - a. Are these valid?
  - b. Why?

- \* Focus on questions 1, 3, 5, and 8.
- \* The first two questions may appear to be rather simple, but they are not
- \* Questions 1 and 2 are the foundation.
- \* Frame the issue as a yes-no question.
- \* Student should avoid simply saying what the article is about—the topic.
- \* If students simply say that an article is about a topic (e.g. intelligence), they will likely

- miss both the point of the article and the author's perspective.
- \* Students should focus on questions such as "Are there different kinds of intelligence?" or "Can traditional IQ tests measure intelligence?"
  - \* Frame the issue as a yes-no question.
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  - \* If students simply say that an article is about a topic (e.g. intelligence), they will likely miss both the point of the article and the author's perspective.
  - \* Students should focus on questions such as "Are there different kinds of intelligence?" or "Can traditional IQ tests measure intelligence?"
  - \* By framing the issue as a question, students can then focus on the author's conclusion.
  - \* Authors do not explicitly state their conclusions.
  - \* Readers can be left to infer the conclusion based on what they find in the text.
  - \* If students cannot identify the issue and the conclusion, the critique will "get off on the wrong foot" and likely fail.
  - \* Yes-No questions encourage students to look for
    - the reasons or evidence that support the answer
    - how the author arrived at his or her conclusion.
  - \* Evidence for answer/conclusion must be evaluated.
  - \* What kind of evidence is typically offered in various kinds of academic articles?
  - \* What kind of evidence is valued?
  - \* Anecdotes, research results, analogies, generalizations ...?
  - \* Question 5 asks students to judge the quality of the evidence based not only on principles of logic, but also on content.
  - \* Students are encouraged to consider what type of evidence was omitted or could have been offered to support the argument—information that would cause a reader to perhaps evaluate the article differently if it had been given.
  - \* Students are generally concerned about their level and understanding of vocabulary.
  - \* They should look for key terms that have multiple meanings.
  - \* If a key term potentially has more than one meaning, one's understanding of the text will vary according to these different meanings.
  - \* *Discriminate*, for example, can be ambiguous.
  - \* "It is important for intelligence tests to discriminate."
    - *to make a distinction?*
    - *to treat differently because of prejudice or bias?*
  - \* First, students carefully think through various aspects of the article as well as any supporting or competing knowledge claims
  - \* Then, students can construct their own perspective which they reveal in their own new text.

### *Stage Three—Writing*

Students should

- \* demonstrate an understanding of the source article,
- \* place their discussion into a larger context,
- \* provide evaluation not based on personal experience but rather on the evaluative criteria suggested by the question prompts, and

- \* provide "disciplinary" support for their evaluation from other readings.
- \* No particular organization is best for the texts that students write.
- \* Generally they begin with a discussion of a context to establish the relevance of the issue raised in the article.
- \* Next is a topic-comment text configuration where the topic is some aspect of the article they are working with and the comment is their critique.
- \* Students may begin with a brief summary of the source article and continue with their own commentary.
- \* Points of critique are organized according to
  - Importance
  - Interest

### **Sample Reading for Critique**

#### **Green Tea May Prevent HIV Infection**

Medical News Today

Article Date: 29 Mar 2007 - 3:00 PDT

Catharine Paddock

A US and UK joint study suggests that drinking green tea may help to prevent HIV infection. The preliminary study is published in the Journal of Allergy and Clinical Immunology and was a joint project between the University of Sheffield, UK, and Baylor College of Medicine, in Texas, USA.

The research team did test tube experiments on a green tea flavonoid called epigallocatechin gallate (EGCG) and showed that it binds with CD4 immune system T-cell receptors and stops HIV from doing the same.

One of the researchers, Professor Mike Williamson of the Department of Molecular Biology and Biotechnology at the University of Sheffield said, ""Our research shows that drinking green tea could reduce the risk of becoming infected by HIV, and could also slow down the spread of HIV."

Prof Williamson was keen to point out that green tea is not a cure, and neither is it a safe way to avoid infection. The study merely suggests that EGCG " has potential use as adjunctive therapy in HIV-1 infection".

In other words, Prof Williamson said, "it should be used in combination with conventional medicines to improve quality of life for those infected". He also mentioned that further studies to find out how much effect different amounts of green tea might have are already under way.

The study was sponsored by the US National Institutes of Health, and a range of research, education and other funds.

Last September, a study from Japan was published in the Journal of the American Medical Association (JAMA) that reported high consumption of green tea was linked to reduced overall risk of death due to all causes and cardiovascular disease.

Other studies have also found positive links between green tea consumption and cancer.

### **Sample Response**

- \* Brief summary of the main point
- \* Acknowledgement of point followed by questioning
- \* Concerns with article
- \* Conclusion/recommendation

A recent article by Catharine Paddock reports that green tea may be beneficial in fighting the HIV infection. Laboratory experiments were done on a chemical in green tea, a flavinoid known as epigallocatechin gallate (EGCG). In the study EGCG bound with certain immune cells and thus prevented HIV from binding to these cells. This result suggests that drinking green tea could prevent HIV or reduce how fast HIV spreads. Researchers say, however, that this does not mean green tea will stop the infection in people.

Despite the positive results, this article is not so convincing. For instance, what happens in a laboratory may not be the same as what happens in a human being. A laboratory is a controlled environment where ideal temperatures and other factors can be controlled. Human beings, on the other hand, are unique organisms and how EGCG might interact with cells in that environment is unclear.

Another weakness in the article is that other chemicals in green tea could work against the effect of EGCG. Although EGCG alone might bind to the immune cells, other chemicals also found in green tea could weaken that bond. If there is such an effect, HIV would still be able to bind and infect the individual.

The article also does not say how much EGCG was needed to produce the effect, raising the question of how much tea a person would have to drink to prevent HIV infection. Other studies have demonstrated that certain foods may protect people from disease, but the amount of food that would need to be eaten for protection is huge. For example, chocolate was recently identified as being healthy for a person because it has chemicals that lowered the risk of cancer and heart disease. However, a person would have to eat maybe a pound of chocolate a day to gain any benefit.

Green tea may also be less healthy because it may contain harmful ingredients if consumed in large amounts. If we look at chocolate again, we see that it has so many other bad ingredients (sugar and caffeine, for example), which make it a rather unhealthy food. In fact to gain the benefits, only pure cocoa should be eaten. A harmful ingredient in tea is caffeine, so in the end people may suffer from headaches or other health problems from this chemical. It may therefore be possible that only pure EGCG should be consumed.

This article does suggest some hope that certain natural foods or drinks may offer strong protection. However, more evidence is needed before people should start thinking that green tea will prevent them from getting HIV or other diseases.