

Learning Innovators
Instructional Innovation Award

Psychology in the Media: An Exercise in Critical Thinking

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One of the major objectives for many college instructors is training students in critical thinking skills. Critical thinking is a meta-cognitive skill (Kowalski & Taylor, 2004) involving the conceptualization, application, analysis, synthesis and/or evaluation of information (Scriven & Paul, 2004). Unlike typical course content, there are no facts or information to memorize to assist in teaching critical thinking, instead students must be provided with guided practice. How to provide that practice in a way that relates to the student's own knowledge base while still making the skills generalizable is the challenge. I have covered critical thinking in my courses (See Appendix A), including using a textbook on critical thinking for several semesters now, but have not yet found a good method of giving the students practice in applying the concepts. Last semester I created an exercise to assist psychology students in practicing critical thinking, and hopefully make the students more critical consumers of psychology as presented in mainstream media.

In the modern age of technology students can search the internet for information on topics relating to almost any course. Hence, instructors must not only be sources of information, but must also train students to be good consumers of information. A difficulty in many courses, including psychology, is that students come into the class with prior knowledge based on personal experience, information from other people, and information in the press. Thus, when presenting information in class the instructor must sometimes first overcome misguided beliefs (Guzzetti, 2000; Kowalski & Taylor, 2004).

Critical thinking is one way this might be accomplished (Kowalski & Taylor, 2004). Critical thinking is a useful tool for evaluating not only academic information, but information

gathered from more general sources. University faculty report that critical thinking is an important and necessary skill (Halpern, 1988; Lynch, 2005). But it is not clear how to improve students' ability to think critically. I designed an exercise to accomplish several goals relating to critical thinking. First it is one tool for engaging students in an exercise in critical thinking. It does this by connecting to something students are familiar with (media articles), but asking them to process it in a new way. Additionally this exercise is useful in getting students to think about whether information from non-academic sources is as reliable/useful as information from academic sources. This kind of technique could be applied in many different kinds of courses, adjusting the specific articles to the topic of the class.

I required students to read 3 articles from Newsweek discussing gender differences in academic achievement. The general theme of the articles was how boys are falling behind academically (males are less likely to go to college than females). From an academic perspective, the articles have numerous flaws. Although the factual material in the articles is accurate, the overall tone of the writing is misleading. For example, the language in the articles is quite biased. Examples include: "By almost every benchmark, boys across the nation and in every demographic group are falling behind" (Tyre, 2005) and "With millions of parents wringing their hands, educators are searching for new tools to help tackle the problem of boys" (Tyre, 2005). Additionally since these are articles for a general audience, the reporters select only the evidence that supports their argument. The articles fail to consider evidence of academic advancement among males (higher SAT score than females, higher rates of graduate/professional degrees). Most students have little experience with a more academic approach, so their initial reactions were based on their own personal beliefs or prior personal experience rather than scientific merit. In order to assess students understanding of the articles,

the following week they were given a quiz on the readings. One of the questions on the quiz was, "What were your general feelings about the article? Did you agree/disagree?"

The next assignment involved reading several chapters from a text on critical thinking. The text covers topics including confirmation bias, nominal fallacy, and the evaluative bias of language. I required the students to answer questions about the original Newsweek readings based on the textbook readings. I then asked the students to independently apply all of the principles covered in their text to the Newsweek readings. I did this to allow the students to practice applying a more scientific or academic approach to reading an article written for a general audience.

As part of this Mid-Term exam (See Appendix A) I asked the students "What were your general feelings about the Newsweek articles? Do you agree/disagree with their general points?" The students' final assignment in the course involved a research paper on the topic of gender difference in academics. This highlighted the differences between writing for a general audience and writing for the scientific community. Students had to state their opinion on the topic as part of this assignment. I examined the students' reactions to the Newsweek readings and to the topic of gender differences in academics.

While on the first reading of the Newsweek articles 91% of the students agreed with their overall message, by the time of the mid-term only 10% thought the premise of the articles was valid. On the final paper, a majority of the students (85%) reported that they would look at media reports with a more critical eye in the future. This exercise was particularly useful for getting students to be more objective in evaluating material, to understand the impact of biased language, and to understand the difference between media reports and scientific evidence. I am still using this technique and have expanded the overall assignment to include articles on other

topics and a paper where the student selects a media article on a topic of their choice and then must compare that to academic/scientific evidence.

Appendix A
Applying Critical Thinking Guidelines

- 1) Ask questions; be willing to wonder
- 2) Define the problem; be as specific as possible
- 3) Examine the evidence.
- 4) Question the quality of the evidence. Not all evidence is equal.
- 5) Analyze the assumptions and biases in the evidence.
- 6) Analyze your own assumptions and biases. Suspend your belief.
- 7) Avoid emotional reasoning.
- 8) Don't use either/or thinking, or over-generalize.
- 9) Consider other interpretations
- 10) Tolerate uncertainty

Appendix B
Psyc Thinking
Fall 2006
Mid-Term

Due Wed Oct 4 by 7:00 pm (Wed class)
Due Thur Oct 5 by 1:00 pm (Thur class)

All Mid-Terms must be turned in through WebCT, no exceptions

"Thirty years ago it was girls, not boys, who were lagging, The 1972 federal law Title IX forced schools to provide equal opportunities for girls in the classroom and on the playing field. Over the next two decades, billions of dollars were funneled into finding new ways to help girls achieve. In 1992, the American Association of University Women issues a report claiming that the work of Title IX was not done--girls still fell behind in math and science; by the mid-1990s, girls had reduced the gap in math and more girls than boys were taking high-school-level biology and chemistry."

"Do Mars and Venus ride the school bus? Gray is part of a crop of educators with a radical idea--that boys and girls are so biologically different they need to be separated into single-sex classes and taught in different ways. In the last five years, brain researchers using sophisticated MRI and PET technology have gathered new information about the ways male and female brains develop and process information. Studies show that girls, for instance, have more active frontal lobes, stronger connections between brain hemispheres and "language centers" that mature earlier than their male counterparts. Critics of gender-based schooling charge that curricula designed to exploit such differences reinforce the most narrow cultural stereotypes. But proponents say that unless neurological, hormonal and cognitive differences between boys and girls are incorporated in the classroom, boys are at a disadvantage."

Consider these 2 passages from our Newsweek readings. Evaluate them based on the principles discussed in Tools of Critical Thinking by Levy. What are the strengths and/or weakness of the Newsweek author's arguments? For each error made suggest an antidote. Hint: Levy provides a very useful summary table in his text (pp 210-223). What were your general feelings about the Newsweek articles? Do you agree/disagree with their general points?