Getting Students to Think Critically

This document was prepared by Alexander Vasilovsky for Level 3 of the LTO's Professional Development in Teaching program for TA/GAs.

What is Critical Thinking

John Dewey is widely regarded as the "father" of the modern critical thinking tradition. He called it "reflective thinking" and defined it as:

> Active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends. (pp. 9)

Others (e.g., Glaser, 1941; Norris & Ennis, 1989) expanded upon Dewey's focus on ***active*** (versus passive) process, ***persistent*** and ***careful*** (versus unreflective) thinking, and the importance of understanding the ***reasons*** we have for believing something and the ***implications*** of our beliefs. To this working definition, Paul, Fisher and Nosich (1993) added "thinking about thinking" (sometimes called "metacognition"):

> Critical thinking is that mode of thinking – about any subject, content or problem – in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them. (pp. 4)

In this way, "good" critical thinking is a "skilled" activity (Fisher & Scriven, 1997) that adheres to certain intellectual values (e.g., accuracy, breadth, clarity, consistency, depth, fairness, good reasons, precision, relevance, sound evidence; Duncan, n.d.). When we think critically, we are not only organizing and making connections between ideas *but also* analyzing the ways in which an idea is created and the ways in which we have been analyzing it.

What I typically tell students is that critical thinking is:

1. ***Higher order thinking*** ("You should focus on *how* facts are proven, *how* arguments are formed, and *how* conclusions are reached, not just on *what* the facts, arguments, or conclusions are");
   and
2. ***Self-reflexive*** ("You should analyze your own thinking processes *in addition to* discipline-specific forms of reasoning").

The focus, I stress, is on ***ideas*** (e.g., assumptions, biases, flaws in reasoning, point of view, context, implications) and not only on information (e.g., data, facts, examples).

How to Think Critically

According to Fischer (2011), some of the fundamental critical thinking skills include how to:

- Identify the elements in a reasoned case, especially reasons and conclusions
- Identify and evaluate assumptions

- Clarify and interpret expressions and ideas
- Judge the acceptability, especially the credibility, of claims
- Evaluate arguments of different kinds
- Analyze, evaluate, and produce explanations or make decisions
- Draw inferences
- Produce arguments

These fundamental skills or basic competencies that underlie critical thinking can be broken into five steps, which you can review with students to help guide their work:

1. Attend to your own and to the researchers' assumptions, biases, and theoretical orientations
2. Consider other perspectives
3. Ask complex questions rigorously
4. Analyze, synthesize, interpret, and evaluate; *and then*
5. Reflect on the preceding four steps.

This process is not intended to be stage-like, although the fifth step requires at least one of the other four to have been engaged.

Teaching Students to Think Critically: A Personal Example

I have been a Teaching Assistant for Dr. Maria Gurevich's "Psychology of Human Sexuality" (PSY621) four times now. As one of the course requirements, students are asked to write a critical literature review of a specific content area pertaining to human sexuality. They are told that the key focus should be on moving beyond a mere description to a *critical analysis* and that their grade will be based on how well they can (critically) synthesize and integrate the theoretical and empirical literature.

"Critical analysis," I have found, is a term that seems to alarm a number of students. Most visits to my office hours for this course are prompted by Dr. Gurevich's call to critical analysis: "What is 'critical analysis'?" and "How do I do 'it'?" are common questions.

Here are some prompts I have used to help students who have expressed difficulty with critical analysis:

- How are research questions framed? What is being asked/explored? Will the framing of the questions lead to limited ways of examining the available information and dictate particular interpretations of results? In other words, are the questions biased/limited and if so how?
- Is the methodology biased/limited? Do the tasks/questionnaires/questions favour one group more than another? Is the methodology appropriate for the questions being asked/problems being addressed?
- What is new about the research? What is old? What contribution is being made to advance our understanding about the particular issue?
- Are the conclusions viable/valid given the methodology that was employed or the authors' initial hypotheses? Are there alternative explanations for the findings? What other important variables are being excluded?

Over the years, I have found it helpful to coach students to focus less on summarizing the literature and more on thinking about how the literature has been ***constructed***:

- For any given topic, judge the researchers' reasoning and ask: What is or is not emphasized? Are there gaps in images, descriptions, or perspectives? Who or what is or is not included?
- Look for assumptions, values, contexts, and consequences
- Clarify ideas
- Consider inferences
- Place less emphasis on the more superficial or basic aspects of research, such as problems with sample size, sample selection (e.g., non-random), sample composition (e.g., inadequate cross-section of genders, ages, ethnocultural groups, SESs, sexual orientations), and external validity (among others)

Moving past the more superficial aspects of research, for this particular class the overriding questions should be: How do issues of gender and sex guide the research area, the questions being posed, and the interpretations, from a larger, more global perspective? Is there a problem with the way that area is being researched? Similar questions could be adapted for other disciplines or courses with comparable assignments or requirements.

Conclusion

The ability to interpret, analyze and evaluate ideas and arguments is integral to students' success at university – but these valuable skills ought not be intimidating to students…nor to teach!

In the past, the emphasis in most people's teaching has been on content – math, history, biology, and so on – and, although many teachers would claim to teach their students how to think, most would say they do so *indirectly* or *implicitly* through teaching discipline-specific content. Increasingly, educators have come to doubt the effectiveness of teaching critical thinking in this way, because most students simply do not learn the skills in question (Fischer, 2011).

We encourage you, instead, to consider teaching this range of transferable thinking skills ***explicitly*** and ***directly***, following the general examples outlined above.

Resources

The Critical Thinking Community: http://www.criticalthinking.org

Fundamentals: Introduction to Critical Thinking: https://www.youtube.com/watch?v=Cum3k-Wglfw

References

Dewey, J. (1910/1997). *How we think*. Mineola: Dover Publications.

Duncan, J. (n.d.). *Critical thinking* [PDF document]. The Writing Centre, University of Toronto Scarborough. Retrieved from https://ctl.utsc.utoronto.ca/twc/sites/default/files/CriticalThinking.pdf

Fisher, A. (2011). *Critical thinking: An introduction* (2nd ed.). Cambridge: Cambridge University Press.

Fisher, A., & Scriven, M. (1997). *Critical thinking: Its definition and assessment.* University of East Anglia: Centre for Research in Critical Thinking.

Glaser, E. M. (1941). *An experiment in the development of critical thinking*. New York: Teacher's College, Columbia University.

Norris, S. P., & Ennis, R. H. (1989). *Evaluating critical thinking.* Pacific Grove: Midwest Publications.

Paul, R., Fisher, A., & Nosich, G. (1993). *Workshop on critical thinking strategies*. Sonoma State University: Foundation for Critical Thinking