2.06 Critical thinking

What is critical thinking?

“Little evidence of critical thinking” is a frequent comment on student essays.

But what is critical thinking, or critical analysis?

Briefly, critical thinking means thinking well and applying sound intellectual standards to your thinking. It involves self-evaluation, thinking about your thinking, and being sure that you are not jumping to conclusions. You should be prepared to consider all aspects of an issue before making up your mind, and to avoid letting personal bias or prejudice interfere with your reasoning.

- Critical thinking is important for most academic tasks, including reading, tutorial discussions, written assignments and exam answers.
- Critical thinking includes such ‘higher-order’ thinking tasks as reasoning, problem-solving, analysis, synthesis, and evaluation. The skills or tasks involved in critical thinking will vary, but may include:
- Developing a logical argument;
- Identifying the flaws or weaknesses in an argument;
- Making relevant connections or links across disciplines, or from theory to practice;
- Analysing the material in a range of sources and synthesising it;
- Applying theory to particular cases.

Intellectual standards

The critical thinker does not simply accept what she/he reads or hears and does not simply make assertions, but bases arguments on evidence and sound reasoning. A way of practising critical thinking is to ask yourself questions as you listen, read and study: questions such as

- What is really important here?
- How does this relate to what I know already?
- What examples might illustrate this idea?
- **How does this relate to my title/question?**

Here is a checklist of seven important intellectual standards and some more questions to ask yourself:

Clarity

Could I have expressed this point in another (better) way? Have I elaborated sufficiently? Have I given illustrations or examples?

If a statement is unclear, the reader can’t tell whether it is accurate or relevant.

Accuracy

Is this really true? Can I check its accuracy?A statement can be clear but inaccurate.

Precision

Have I given enough detail to explain what I mean? Could I have been more specific? A statement can be clear and accurate, but not precise.

Relevance

How is this related to the topic? Is it really relevant to the question?A statement can be clear, accurate and precise, but of little relevance to the question.

Depth

Have I addressed the complexities in this question, or have I just skated over the surface? A statement can be clear, accurate, precise and relevant, but superficial. For example, the slogan “Just say No” which has been used to discourage youth from using drugs, is clear, accurate, precise and relevant, but it does not reveal the complexity of this issue.

Breadth

Are there issues I have omitted? Is there another way to look at this question?A line of reasoning may be clear, accurate, precise, relevant and deep, but still ignore another side of the argument.

Logic

Does this really make sense? How does this follow from what I said before? Does this contradict a previous statement? When we think, we bring a variety of thoughts together in some order. If the combination of these ideas is not mutually supportive, or does not make sense, then the combination is not logical.

(Based on Elder and Paul (1996) Universal Intellectual Standards Center for Critical Thinking, Sonoma State University
http://www.sonoma.edu/cthink/University/univlibrary/unistan.nclk)

Different kinds of critical thinking

Clearly, the kinds of critical thinking required will vary from course to course.

For example, studies in mathematics or engineering might emphasise a systematic problem-solving approach.

However, many academic problems have no absolute solutions; no clearly ‘right’ answers. In some areas (Humanities and Social Sciences, for example) it may be more important for you to identify important questions than to produce solutions.

Playing 'Devil's Advocate'

For an issue or a case study which could be interpreted in different ways, or approached from different viewpoints, one way of suspending your own pre-conceived beliefs is to play 'Devil's Advocate'.

You could try to produce an objective summary of the strengths and limitations of the position you least prefer; then summarise the strengths and weaknesses of your preferred position. You then would be in a better position to explain why and to what extent your position is preferable.

Everyone is subjective (to a degree)

This guide suggests that to be genuinely critical, you should try to suppress personal bias and consider arguments and points of view with an open mind. But this does not mean abandoning all your values!

While you should try to be objective rather than subjective in your thinking, you cannot escape the fact that, like every other individual, your thinking and your views have been shaped by your personal subjective experiences. Absolute objectivity is impossible to achieve. In fact, such objectivity is not even desirable, because our underlying values and beliefs, which profoundly influence the ways in which we think, are essential ingredients of our individuality.

The important thing to remember about critical thinking is that it means not being blinded by one's own bias, prejudice or point of view.

The critical thinker is prepared to consider conflicting points of view before coming to a conclusion. Strong critical thinkers realise that there is uncertainty in the world, and that for many problems there is no 'right' answer or clear solution.

They are aware, too, of the limits of their knowledge and understanding, and are willing to allow their ideas and assumptions to be tested. However, having applied rigorous intellectual standards, they will adopt considered positions and argue strongly for them.

Critical thinking skills

Thinking critically is the best route to developing reasoned and reasonable beliefs. Critical thinking skills help you decide what to believe about an issue, how to defend what you believe, and how to evaluate the beliefs of others.

- Be as clear as possible.
- Focus on a question or issue.
- Try to take into account the whole problem
- Consider all relevant alternatives.Try to be well-informed.
- Seek as much precision as possible.
- Be aware of your biases and assumptions.
- Be open-minded.
- Take a position if you have enough basis; otherwise, withhold judgment.

(From 'The Mind Module' developed by The Agricultural Instructional Media (AIM) Lab - a World Wide Web (WWW) development lab at the University of Illinois at Urbana-Champaign. http://classes.aces.uiuc.edu/AIM/Discovery/Mind/crthinking.html)

Critical writing

Your aim should be to convince the reader. Your writing will be more convincing if it shows evidence of critical thought. Is your position clearly stated? Is it in focus throughout the paper?

- Does your reasoning lead to a logical conclusion?
- Are your definitions clearly explained? Are they reasonable?
- Is your writing clear and concise?
- Do you state and defend your assumptions?
- Is your position well-informed?
- Are your sources identified? Are they credible?
- Are your generalizations reasonable?
- Are your hypotheses and predictions sound?
- Have you covered alternative views?
- Are you being fair and open-minded?
- Will your paper convince your reader?

These checklists are adapted from the CT taxonomy of Dr. Robert Ennis, Professor of the Philosophy of Education, Department of Educational Policy Studies, University of Illinois http://classes.aces.uiuc.edu/AIM/Discovery/Mind/crit-writing.html

More information on Critical Thinking may be found from the following:

Thinking Critically - guide produced by the Open University. Critical thinking, reading, writing, working with others and thinking for yourself.

A Field Guide to Critical Thinking at CSCIOP (the Committee for the Scientific Investigation of Claims of the Paranormal. The frontline of Critical Thinking!