Why Critical Thinking?

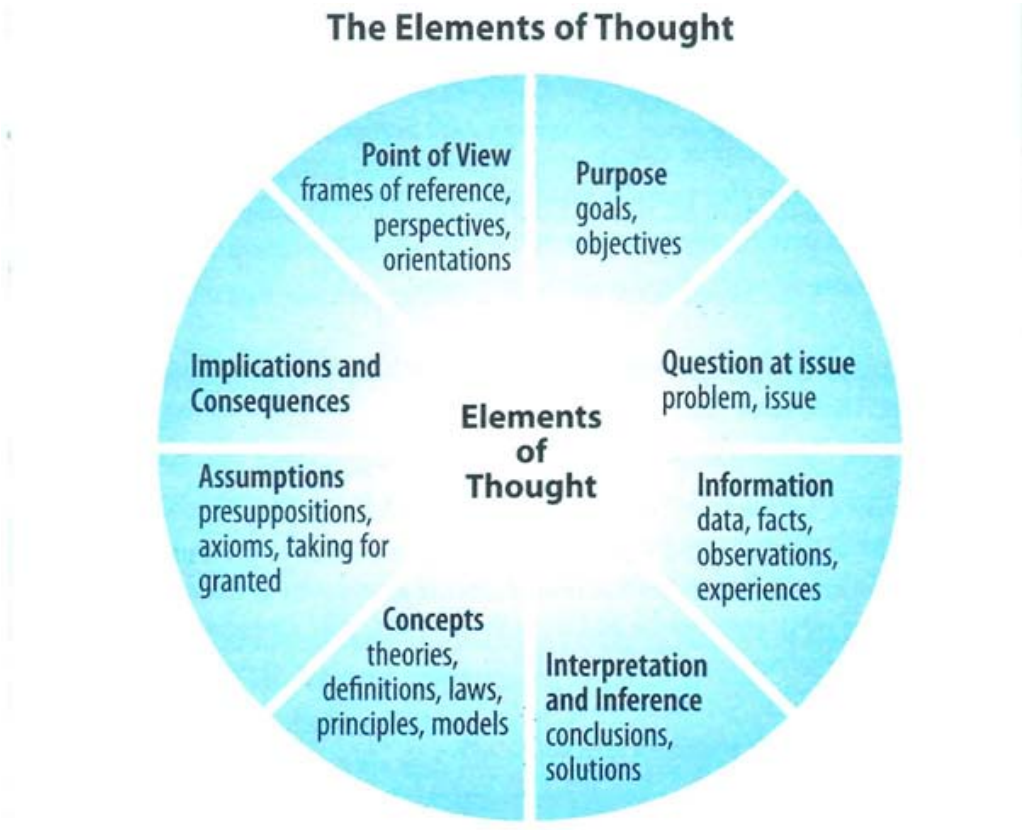
The Problem:
Everyone thinks; it is our nature to do so. But much of our thinking, left to itself, is biased, distorted, partial, uninformed or down-right prejudiced. Yet the quality of our life and that of what we produce, make, or build depends precisely on the quality of our thought. Shoddy thinking is costly, both in money and in quality of life. Excellence in thought, however, must be systematically cultivated.

A Definition:
Critical thinking is the art of analyzing and evaluating thinking with a view to improving it.

The Result:
A well cultivated critical thinker:

- raises vital questions and problems, formulating them clearly and precisely;
- gathers and assesses relevant information, using abstract ideas to interpret it effectively;
- come to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- thinks open-mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and
- communicates effectively with others in figuring out solutions to complex problems.

Critical thinking is, in short, self-directed, self-disciplined, self-monitored, and self-corrective thinking. It requires rigorous standards of excellence and mindful command of their use. It entails communication and problem solving abilities and a commitment to overcoming our native egocentrism and sociocentrism.



A Checklist for Reasoning

I. All reasoning has a PURPOSE.

A. State your purpose clearly.
B. Distinguish your purpose from related purposes.
C. Check periodically to be sure you are still on target.
D. Choose significant and realistic purposes.

II. All reasoning is an attempt to FIGURE something out, to settle some QUESTION, to solve some PROBLEM.

A. State the question at issue clearly and precisely.
B. Express the question in several ways to clarify its meaning and scope.
C. Break the question into sub-questions.
D. Distinguish questions that have definitive answers from those that are a matter of opinion and from those that required consideration of multiple viewpoints.

III. All reasoning is based on ASSUMPTIONS.

A. Clearly identify your assumptions and determine whether they are justifiable.
B. Consider how your assumptions are shaping your point of view.

IV. All reasoning is done from some POINT OF VIEW.

A. Identify your point of view.
B. Seek other points of view and identify their strengths as well as weaknesses.
C. Strive to be fair-minded in evaluating all points of view.

V. All reasoning is based on DATA, INFORMATION and EVIDENCE.

A. Restrict your claims to those supported by the data you have.
B. Search for information that opposes your position as well as information that supports it.
C. Make sure that all information used is clear, accurate, and relevant to the question at issue.
D. Make sure that you have gathered sufficient information.

VI. All reasoning is expressed through, and shaped by CONCEPTS and IDEAS.

A. Identify key concepts and explain them clearly.
B. Consider alternative concepts or alternative definitions of concepts.
C. Make sure you are using concepts with care and precision.

VII. All reasoning contains INFERENCES or INTERPRETATIONS by which we draw CONCLUSIONS and give meaning to data.

A. Infer only what the evidence implies.
B. Check inferences for their consistency with each other.
C. Identify assumptions that lead to inferences.

VIII. All reasoning leads somewhere or has IMPLICATIONS and CONSEQUENCES.

A. Trace the implications and consequences that follow from your reasoning.
B. Search for negative as well as positive implications.
C. Consider all possible consequences.

Template for Analyzing the Logic of an Article

1. The main purpose of the article is _____.
(State as accurately as possible the author's purpose for writing the article.)

2. The key question that the author is addressing is _____.
(Figure out the key question in the mind of the author when s/he wrote the article.)

3. The most important information in this article is _____.
(Figure out the facts, experiences, data the author is using to support her/his conclusions.)

4. The main inferences/conclusions in this article are _____.
(Identify the key conclusions the author comes to and presents in the article.)

5. The key concept(s) we need to understand in this article is (are) _____.
(Figure out the most important ideas your would have to understand in order to understand the author's line of reasoning.)

6. The main assumption(s) underlying the author's thinking is (are) _____.
(Figure out what the author is taking for granted [that might be questioned].)

7a. If we take this line of reasoning seriously, the implications are _____.
(What consequences are likely to follow if people take the author's line of reasoning seriously?)

7b. If we fail to take this line of reasoning seriously, the implications are _____.
(What consequences are likely to follow is people ignore the author's reasoning?)

8. The main point(s) of view presented in this article is (are) _____.
(What is the author looking at, and how is s/he seeing it?)

Criteria for Evaluating Reasoning

1. **Purpose**: What is the purpose of the reasoner? Is the purpose clearly stated or clearly implied? Is it justifiable?
2. **Question**: Is the question at issue well-stated? Is it clear and unbiased? Does the expression of the question do justice to the complexity of the matter at issue? Are the question and purpose directly relevant to each other?
3. **Information**: Does the writer cite relevant evidence, experiences, and/or information essential to the issue? Is the information accurate? Does the writer address the complexities of the issue?
4. **Concepts**: Does the writer clarify key concepts when necessary? Are the concepts used justifiably?
5. **Assumptions**: Does the writer show sensitivity to what he or she is taking for granted or assuming? (Insofar as those assumptions might reasonably be questioned?) Does the writer use questionable assumptions without addressing problems which might be inherent in those assumptions?
6. **Inferences**: Does the writer develop a line of reasoning, thoroughly explaining how s/he is arriving at her or his main conclusions?
7. **Point of View**: Does the writer show sensitivity to alternative relevant points of view or lines of reasoning? Does s/he consider and respond to objections framed from other relevant points of view?
8. **Implications**: Does the writer show sensitivity to the implications and consequences of the position s/he is taking?

Analyzing and Assessing the Quality of Research

I. All research has a fundamental PURPOSE and goal.

A. Research purposes and goals should be clearly stated.
B. Related purposes should be explicitly distinguished.
C. All segments of the research should be relevant to the purpose.
D. All research purposes should be realistic and significant.

II. All research addresses a fundamental QUESTION, problem, or issue.

A. The fundamental question at issue should be clearly and precisely stated.
B. Related questions should be articulated and distinguished.
C. All segments of the research should be relevant to the central question.
D. All research questions should be realistic and significant.
E. All research questions should define clearly stated intellectual tasks that, being fulfilled, settle the questions.

III. All research identifies data, INFORMATION, and evidence relevant to its fundamental question and purpose.

A. All information used should be clear, accurate, and relevant to the fundamental question at issue.
B. Information gathered must be sufficient to settle the question at issue.
C. Information contrary to the main conclusions of the research should be explained.

IV. All research contains INFERENCES or interpretations by which conclusions are drawn.

A. All conclusions should be clear, accurate, and relevant to the key question at issue.
B. Conclusions drawn should not go beyond what the data imply.
C. Conclusions should be consistent and reconcile discrepancies in the data.
D. Conclusions should explain how the key questions at issue have been settled.

V. All research is conducted from some POINT OF VIEW or frame of reference.

A. All points of view in the research should be identified.
B. Objections from competing points of view should be indentified and fairly addressed.

VI. All research is based on ASSUMPTIONS.

A. Clearly identify and assess major assumptions in the research.
B. Explain how the assumptions shape the research point of view.

VII. All research is expressed through, and shaped by, CONCEPTS and ideas.

A. Assess for clarity of the key concepts in the research.
B. Assess the significance of the key concepts in the research.

VIII. All research leads somewhere (i.e., have IMPLICATIONS and consequences).

A. Trace the implications and consequences that follow from the research.
B. Search for negative as well as positive implications.
C. Consider all significant implications and consequences.