The Nature of Critical Thinking: An Outline of Critical Thinking Dispositions and Abilities[i]

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Critical thinking is reasonable and reflective thinking focused on deciding what to believe or do. This definition I believe captures the core of the way the term is used in the critical thinking movement. In deciding what to believe or do, one is helped by the employment of a set of critical thinking dispositions and abilities that I shall outline. These can serve as a set of comprehensive goals for a critical thinking curriculum and its assessment. Usefulness in curriculum decisions, teaching, and assessment, not elegance or mutual exclusiveness, is the purpose of this outline. For the sake of brevity, clarification in the form of examples, qualifications, and more detail, including more criteria, are omitted, but can be found in sources listed below, but most fully in my *Critical Thinking* (1996a).

This outline is the encapsulation of many years of work in the elaboration of the simple definition of critical thinking given above, and it distinguishes between critical thinking dispositions and abilities.

It is only a critical thinking *content* outline. It does not specify grade level, curriculum sequence, emphasis, teaching approach, or type of subject-matter content involved (standard subject-matter content, general knowledge content, streetwise-knowledge content, special knowledge content, etc.). For assessment purposes it can only provide a basis for developing a table of specifications and the preparation of assessment rubrics.

Critical Thinking Dispositions

Ideal critical thinkers are disposed to

1. Care that their beliefs be true[ii], and that their decisions be justified; that is, care to "get it right" to the extent possible; including to
   a. Seek alternative hypotheses, explanations, conclusions, plans, sources, etc.; and be open to them
   b. Consider seriously other points of view than their own
   c. Try to be well informed
   d. Endorse a position to the extent that, but only to the extent that, it is justified by the information that is available
   e. Use their critical thinking abilities

2. Care to understand and present a position honestly and clearly, theirs as well as others'; including to
   a. Discover and listen to others' view and reasons
   b. Be clear about the intended meaning of what is said, written, or otherwise communicated, seeking as much precision as the situation requires
   c. Determine, and maintain focus on, the conclusion or question
   d. Seek and offer reasons
   e. Take into account the total situation
   f. Be reflectively aware of their own basic beliefs

3. Care about every person. (This one is an auxiliary, not constitutive, disposition. Although this concern for people is not constitutive, critical thinking can be dangerous without it.) Caring critical thinkers

a. Avoid intimidating or confusing others with their critical thinking prowess, taking into account others' feelings and level of understanding

b. Are concerned about others' welfare

Critical Thinking Abilities

The following abilities numbered 1 to 3 involve basic clarification; 4 and 5, the bases for a decision; 6 to 8, inference; 9 and 10, advanced clarification; and 11 and 12, supposition and integration. Abilities13 to 15 are auxiliary abilities, not constitutive of critical thinking, but very helpful.

Ideal critical thinkers have the ability to:

(Basic Clarification, 1 to 3)

1. **Focus** on a question:
   a. Identify or formulate a question
   b. Identify or formulate criteria for judging possible answers
   c. Keep the question and situation in mind

2. Analyze **argument***s*:
   a. Identify conclusions
   b. Identify reasons or premises
   c. Ascribe or identify simple assumptions (see also ability 10)
   c. Identify and handle irrelevance
   d. See the structure of an argument
   e. Summarize

3. Ask and answer clarification and/or challenge **question***s*, such as:
   a. Why?
   b. What is your main point?
   c. What do you mean by·?
   d. What would be an example?
   e. What would not be an example (though close to being one)?
   f. How does that apply to this case (describe a case, which appears to be a counterexample)?
   g. What difference does it make?
   h. What are the facts?
   i. Is this what you are saying:_____?
   j. Would you say more about that?

(Two Bases for a Decision: 4 and 5)

4. Judge the **credibility** of a source. Major **criteria** (but not necessary conditions):
   a. Expertise
   b. Lack of conflict of interest
   c. Agreement with other sources
   d. Reputation
   e. Use of established procedures
   f. Known risk to reputation (the source's knowing of a risk to reputation, if wrong)
   g. Ability to give reasons
   h. Careful habits

5. Observe, and judge **observation** reports. Major **criteria** (but not necessary conditions, except for the first):
   a. Minimal inferring involved
   b. Short time interval between observation and report
   c. Report by the observer, rather than someone else (that is, the report is not hearsay)
   d. Provision of records
   e. Corroboration
   f. Possibility of corroboration
   g. Good access

h. Competent employment of technology, if technology applies
i. Satisfaction by observer (and reporter, if a different person) of the credibility criteria in Ability # 4 above

(Note: A third basis is your own established conclusions.)

(Inference, 6 to 8)

6. Deduce, and judge **deduction**:
a. Class logic
b. Conditional logic
c. Interpretation of logical terminology, including
(1) Negation and double negation
(2) Necessary and sufficient condition language
(3) Such words as "only", "if and only if", "or", "some", "unless", and "not both"
d. Qualified deductive reasoning (a loosening for practical purposes)

7. **Make material inferences** (roughly "induction"):
a. To **generalizations**. Broad considerations:
(1) Typicality of data, including valid sampling where appropriate
(2) Volume of instances
(3) Conformity of instances to generalization
(4) Having a principled way of dealing with outliers
b. To **explanatory hypotheses** (IBE: "inference-to-best-explanation"):
(1) Major types of explanatory conclusions and hypotheses:
(a) Specific and general causal claims
(b) Claims about the beliefs and attitudes of people
(c) Interpretation of authors' intended meanings
(d) Historical claims that certain things happened (including criminal accusations)
(e) Reported definitions
(f) Claims that some proposition is an unstated, but used, reason
(2) Characteristic investigative activities
(a) Designing experiments, including planning to control variables
(b) Seeking evidence and counterevidence, including statistical significance
(c) Seeking other possible explanations
(3) **Criteria**, the first four being essential, the fifth being desirable
(a) The proposed conclusion would explain or help explain the evidence
(b) The proposed conclusion is consistent with all known facts
(c) Competitive alternative explanations are inconsistent with facts
(d) A competent sincere effort has been made to find supporting and opposing data, and alternative hypotheses
(e) The proposed conclusion seems plausible and simple, fitting into the broader picture

8. Make and judge **value judgments** Important factors:
a. Background facts
b. Consequences of accepting or rejecting the judgment
c. Prima facie application of acceptable principles
d. Alternatives
e. Balancing, weighing, deciding

(Advanced Clarification, 9 and 10)

9. Define terms and judge **definitions,** using appropriate criteria

Three basic dimensions are form, function (act), and content. A fourth, more advanced dimension is handling equivocation.

a. Definition form. For criteria for 1 through 4 and 6, see Ennis (1996, Ch 12 & 13). For #5 see Ennis (1964, 1969c).

(1) Synonym
(2) Classification
(3) Range
(4) Equivalent-expression
(5) Operational
(6) Example and non-example

b. Definitional functions (acts)

(1) Report a meaning (criteria: the five for an explanatory hypothesis)

(2) Stipulate a meaning (criteria: convenience, consistency, avoidance of impact equivocation)

(3) Express a position on an issue (positional definitions, including "programmatic" and "persuasive" definitions) Criteria: those for a position (Ennis 2001)

c. Content of the definition

d. Identifying and handling equivocation (Ennis 1996)

10. Attribute **unstated assumptions** (an ability that belongs under both *basic clarification* (2b) and *inference* (7b1f)

a. Pejorative flavor (dubiousness or falsity): commonly but not always associated to some degree with the different types. Criteria: See #8 above.

b. Types:

(1) Presuppositions (required for a proposition to make sense)

(2) Needed assumptions (needed by the reasoning to be at its strongest, but not logically necessary (Ennis 1982)), (called "assumptions of the argument" by Hitchcock (1985))

(3) Used assumptions (judged by hypothesis-testing criteria, Ennis 1982), called "assumptions of the arguer" by Hitchcock (1985)

(Supposition and Integration, 11 and 12)

11. Consider and reason from premises, reasons, assumptions, positions, and other propositions with which they disagree or about which they are in doubt, without letting the disagreement or doubt interfere with their thinking (**"suppositional thinking"**)

12. **Integrate** the dispositions and other abilities in making and defending a decision

(A*uxiliary abilities*, 13 to 15)

13. Proceed in an orderly manner appropriate to the situation:

a. Follow **problem solving** steps

b. Monitor their own thinking (that is, engage in **metacognition**)

c. Employ a reasonable critical thinking **checklist**

14. Be **sensitive to** the feelings, level of knowledge, and degree of sophistication of **others**

15. Employ appropriate **rhetorical strategies** in discussion and presentation (oral and written), including employing and reacting to "**fallacy**" labels in an appropriate manner. Examples of fallacy labels are "circularity," "bandwagon," "post hoc," "equivocation," "non sequitur," and "straw person"

Summary and Comments

In brief, the ideal critical thinker is disposed to try to "get it right," to present a position honestly and clearly, and to care about others (this last being auxiliary, not constitutive); furthermore the ideal critical thinker has the ability to clarify, to seek and judge well the basis for a view, to infer wisely from the basis, to imaginatively suppose and integrate, and to do these things with dispatch, sensitivity, and rhetorical skill.

In presenting this outline of critical thinking dispositions and abilities, I have only attempted to depict, rather than defend, them. The defense would require much more space than is available, but would follow two general paths: 1) examining the traditions of good thinking in existing successful disciplines of inquiry, and 2) seeing how we go wrong when we attempt to decide what to believe or do.

In any teaching situation for which critical thinking is a goal, whether it be a separate critical thinking course or module, or one in which the critical thinking content is infused in (making critical thinking principles explicit) or immersed in (not making critical thinking principles explicit) standard subject-matter content, or some mixture of these; all of the dispositions, as well as the suppositional and integrational abilities (# 11 and #12) and auxiliary abilities (#13 through #15) are applicable all the time and should permeate the instruction to the extent that time and student ability permit.

I have only attempted to outline a usable and defensible set of critical thinking goals, including criteria for making judgments. Space limitations have precluded exemplifying their application to curriculum, teaching, and assessment, though I have done so elsewhere.[iii] However, goals are the place to start. I hope that this outline provides a useful basis on which to build curriculum, teaching, and assessment procedures.

Sources of exemplification, elaboration, and more criteria.

The meaning, significance, and application of some of the above aspects might not be apparent to some, who might find the following items, most of which contain helpful examples, to be of help. Furthermore criteria for definition are not provided in the above outline of the nature of critical thinking because they are too complex for a brief listing. Elaboration of these criteria and this conception by me are listed in “References” (below): in process, 2011, 2007, 2006, 2004, 2002, 2001, 1998, 1996a, 1996b, 1991a, 1991b, 1991c, 1987a, 1987b, 1982b, 1982a, 1981a, 1981b, 1981c, 1980, 1979, 1974a, 1974b, 1973, 1969a, 1969b, 1969c, 1968, 1964a, 1964b, 1962, 1961, and 1958. Of these, 1996a, 1991c, 1987a are the best choices for a combination of currency (though there have been minor changes since then), comprehensiveness, and exemplification.

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Endnotes.

[i] This is a several-times-revised version of a presentation at the Sixth International Conference on Thinking at MIT, Cambridge, MA, July, 1994. Last revised May, 2011.

[ii] With respect to epistemological constructivism (the view that truth is constructed): In expressing a concern about true belief, this conception of critical thinking accepts the view that our concepts and vocabulary are constructed by us, but also that (to oversimplify somewhat) the relationships among the referents of our concepts and terms are not constructed by us. We can have true or false beliefs about these.

With respect to pedagogical constructivism (the view that students learn best when they construct their own answers to problems and questions): For some (but not all) goals and types of learning, this view has empirical support, but it should not be confused with epistemological constructivism. In particular, the validity of pedagogical constructivism (to the extent that it is valid) does not imply the validity of epistemological constructivism. They are totally different ideas.

[iii] My complete list of publications is to be found in the publications sections of my academic web site, http://faculty.ed.uiuc.edu/rhennis