What is critical thinking

Definitions and backgrounds

Definition

- A comprehensive, concise operating definition by Michael Scriven and Richard Paul (2003):
  - Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

The basic concept of critical thinking

- careful thinking directed to a goal
- Its adoption as an educational goal has been recommended on the basis of respect for **students' autonomy** and **preparing students for success in life and for democratic citizenship**.
- "Critical thinkers" have the dispositions and abilities that lead them to think critically when appropriate.

Hitchcock, David, "Critical Thinking", The Stanford Encyclopedia of Philosophy (Fall 2018 Edition)

History

- **'reflective thinking'**: active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends. (Dewey 1910: 6; 1933: 9)
- Glaser (1941) showed experimentally that it was **possible to improve the critical thinking of high school students.**
- **Bloom's influential taxonomy of cognitive educational objectives** (Bloom et al. 1956) incorporated critical thinking abilities.
- Ennis (1962) proposed **12 aspects of critical thinking** as a basis for research on the teaching and evaluation of critical thinking ability.

Definition of critical thinking in educational contexts

- "programmatic definition" (Scheffler 1960: 19).
- It expresses **a practical program** for achieving an educational goal.
  - For this purpose, a one-sentence formulaic definition is much less useful than **articulation of a critical thinking process**, with ***criteria*** and ***standards*** for the kinds of thinking that the process may involve.
  - **The real educational goal** is ***recognition, adoption and implementation*** by students of those criteria and standards.
  - That adoption and implementation in turn consists in *acquiring the knowledge, abilities and dispositions of a critical thinker*.

Teaching critical thinking (1)

- Experiments have shown that educational interventions can improve critical thinking abilities and dispositions, as measured by standardized tests.
- **Glaser (1941)** developed teaching materials suitable for senior primary school, high school and college students. To test their effectiveness, he developed with his sponsor Goodwin Watson the Watson-Glaser Tests of Critical Thinking, whose descendants are in widespread global use under the name "Watson-Glaser Critical Thinking Appraisal" (Watson & Glaser 1980a, 1980b, 1994).

Teaching critical thinking (2)

Ennis (2013, 2018) has made a detailed proposal for a mixed approach to teaching critical thinking across the curriculum of undergraduate education. Attempts at implementing such an approach have faced difficulties. Weinstein (2013: 209–213) describes the attempt at Montclair State University in Montclair, New Jersey, from 1987 through the 1990s. He reports that the university's requirement to include critical thinking in all general education courses led to the use of the concept in identifying topics and tasks in course syllabi, but without a unifying theoretical basis. The committee that approved courses as satisfying a general education requirement ignored the **relation of curricular outcomes to critical thinking and focused instead on work requirements with a prima facie relation to reflective thought: term papers, projects, group work, and dialogue.**

Teaching critical thinking (3)

- **Sheffield (2018)** reports similar difficulties encountered in his position from 2012 to 2015 as the inaugural Eugene H. Fram Chair in Applied Critical Thinking at Rochester Institute of Technology (RIT) in Rochester, New York. A cross-disciplinary faculty advisory group was not ready to accept RIT's approved definition of critical thinking, but never reached a consensus on an alternative.
- **Payette and Ross (2016**), on the other hand, report widespread acceptance of the Paul-Elder framework, which involves elements of thought, intellectual standards, and intellectual virtues (Paul & Elder 2006).
- Sheffield (2018) reports that many colleges and universities in the United States have received funding for so-called "Quality Enhancement Plans" (QEPs) devoted to critical thinking, many of them written by Paul and Elder or developed in consultation with them. He faults the plans for having a typical time frame of five years, which he argues is probably too short for meaningful results, since lasting institutional change is often extremely slow.

Two essential dimensions of thinking (by Paul and Elder)

There are two essential dimensions of thinking that students need to master in order to learn how to upgrade their thinking:

- They need to be able to identify the "parts" of their thinking,
- and they need to be able to assess their use of these parts of thinking.

Paul and Elder (1997)

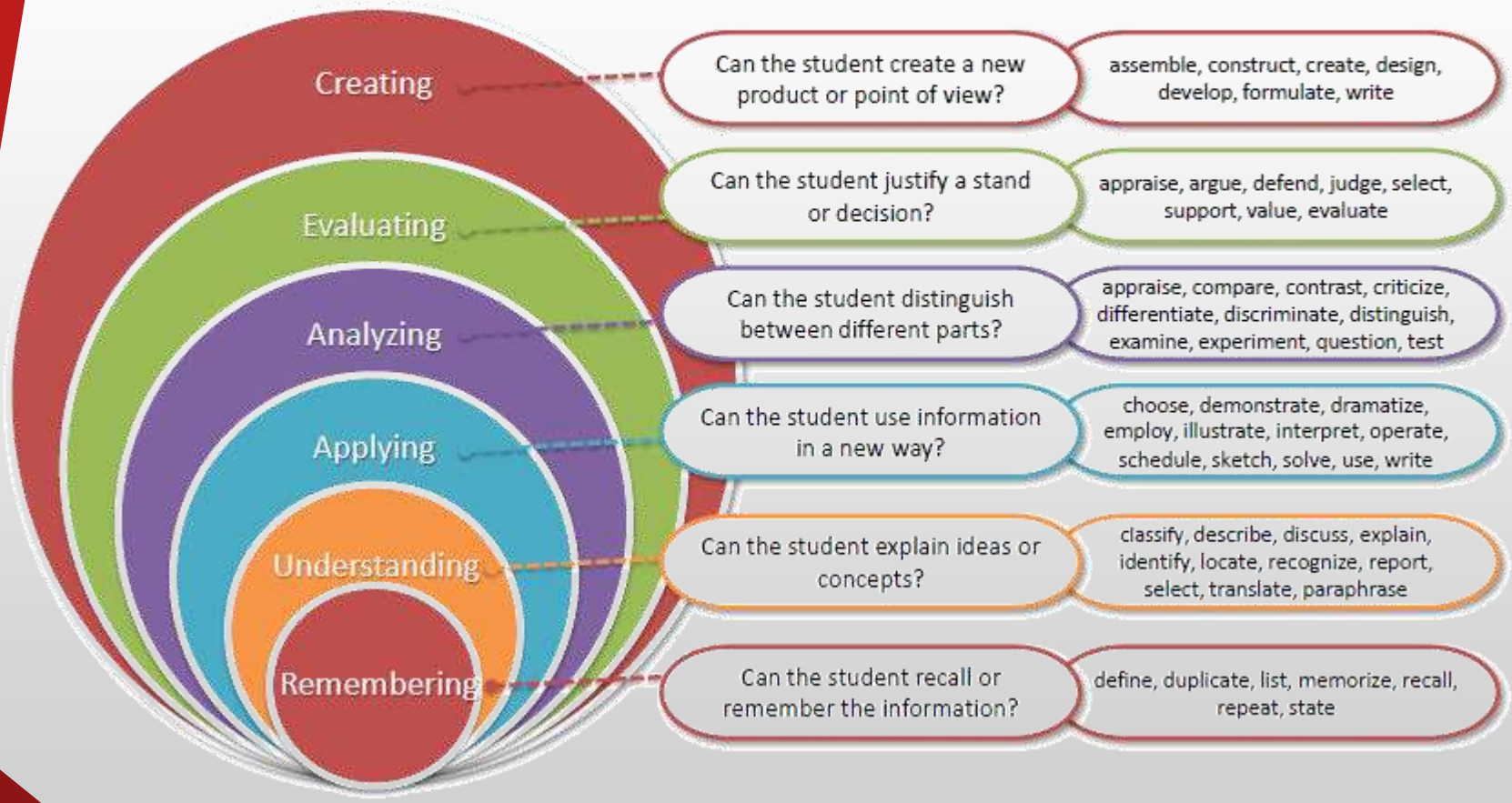
Characteristics of a Well-Cultivated Critical Thinker

Habitual utilization of the intellectual traits produce a well-cultivated critical thinker who is able to:

- Raise vital questions and problems, formulating them clearly and precisely.
- Gather and assess relevant information, using abstract ideas to interpret it effectively.
- Come to well-reasoned conclusions and solutions, testing them against relevant criteria and standards.
- Think open-mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences.
- Communicate effectively with others in figuring out solutions to complex problems.

Paul and Elder (1997)

Bloom's Taxonomy (Revised)



http://pcs2ndgrade.pbworks.com/w/page/46897760/Revised%20Bloom%27s%20Taxonomy

Sources

- Hitchcock, David, "Critical Thinking", The Stanford Encyclopedia of Philosophy (Fall 2018 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/fall2018/entries/critical-thinking/>.
- Paul, R. and Elder, L. (2010). The Miniature Guide to Critical Thinking Concepts and Tools. Dillon Beach: Foundation for Critical Thinking Press.