Critical Thinking [in Psychology]

by Russ Dewey (2007)

Psychologists as a group tend to be very *skeptical*. In other words, they have a "show me" or "prove it to me" attitude. Most encourage their students to practice critical thinking.

Critical thinking does not necessarily mean "making criticisms." It means doing a good job of evaluating evidence. It means developing intellectual tools to avoid being gullible or easily taken in by false claims or "quack" science (highly questionable or absurd ideas presented as though they are scientific truths).

The phrase *critical thinking* became popular among educators in the 1950s, but critical thinking is "more important than ever" for today's students, according to psychologist Diane Halpern (Halpern, 1998). Advances in technology have put more information at our fingertips. Web pages devoted to strange theories are commonplace. Students need to use critical thinking to separate the wheat from the chaff (separate what is valuable from what is useless).

Critical thinking has been described in many ways over the years, but there are certain recurrent themes:

> **Avoid jumping to conclusions**: Suspend judgment; keep an open mind until you have adequate evidence; tolerate uncertainty; avoid oversimplification.
>
> **Examine assumptions**: Define the problem; identify premises or starting assumptions; list goals, constraints, or objectives; look for biases.
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> **Generate new ideas**: Brainstorm; write down every idea that comes up without initial criticism; experiment with ideas opposite to those normally considered; ask questions; consider other perspectives; draw diagrams and pictures to clarify plans.
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> **Evaluate evidence**: Ask how an idea can be tested; evaluate the evidence offered. Be cautious in generalizing from one context to another. Learn about common problems in research that can produce misleading results. Learn what constitutes evidence and look for multiple, independent sources of evidence for any important claim.

This is good advice, although none of it is new. Some of it is antique. For example, William James told philosophy students to "cultivate the habit of seeing the alternative" in the 1880s. The advice borders on common sense, yet it never grows old. We have all seen people make hasty or emotional and oversimplified judgments or accept ideas that are preposterous or strange. Obviously it is a good thing to stay open to new ideas, question old assumptions, and come up with fresh alternatives.

However, the fourth theme is perhaps the most important. At the end of the day, after staying open-minded and generating new ideas, one is left with the problem of *evaluating evidence* This is the specialty of science: gathering and evaluating evidence. It is also a major weak spot in public education in the U.S. and probably in other countries as well. When the National Science Foundation in the United States surveyed public attitudes and knowledge about science, they found that 70% of American adults said they were "interested" in science, but fewer than 30% could give a passable definition of a scientific experiment or hypothesis. Rensberger (2000) wrote:

> Without a grasp of the scientific ways of thinking, the average person cannot tell the difference between science based on real data and something that resembles science-at least in their eyes-but is based on uncontrolled experiments, anecdotal evidence, and passionate assertions. They like it all.

In other words, all the critical thinking instruction in the world will not help people distinguish between true and false claims if they do not have a grasp of what constitutes *scientific evidence*.