Measuring Thinking Worldwide

2015 Update on the Critical Thinking Mindset from Delphi Report Principle Investigator, Dr. Peter Facione

The Starting Point: Excerpted from the 1990 APA Delphi Report

TABLE 1

CONSENSUS STATEMENT REGARDING CRITICAL THINKING AND THE IDEAL CRITICAL THINKER

We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one’s personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society.

As Table 1 suggests, a key result of inquiry is the articulation by a panel of CT experts of a conceptualization of CT in terms of two dimensions: cognitive skills and affective dispositions.

Critical Thinking Relies on More Than Thinking Skills

Critical thinking is purposeful, reflective judgment focused on deciding what to believe or what to do. Critical thinking is a pervasive human phenomenon. Many times each day we analyze information, interpret events and situations, evaluate claims and the reasons offered in their support. Based on those analyses, interpretations and evaluations we draw inferences and make reflective judgments about what to believe and what to do. These reflective judgments are the focus of critical thinking.1

1 Facione, PA., “Critical Thinking: What it is and Why it Counts,” For the latest update visit www.insightassessment.com

Think Critically, Peter Facione & Carol Gittens, Pearson Education
That there is a constellation of attitudes and attributes, a group of habits of mind (mindset), which describe the overall disposition to think critically, has long been discussed. Plato and Socrates spoke of the characteristics of the person they believed to be associated with strength in reason. More than 80 years ago, in *How We Think*, John Dewey expressed the significance of these habits of mind. The practiced use of critical thinking as an approach to the important problems faced in one’s life and work situations requires the development of habits of mind that demand excellence in reflective judgment.

In the late 1980’s a foundational concept analysis to study was conducted to develop a consensus definition of critical thinking. This study is now referred to as the APA Delphi study of critical thinking. The strength of the study was the use of the Delphi research method which allows the investigator to compile a consensus position without the undue influence of any one participant scholar or expert. The blinded, iterative conceptual clarification process that occurs with the Delphi approach permits the discussion of key questions and concepts, and the development of consensus, without introducing bias related to the prestige of the experts involved. The resulting consensus definition of critical thinking, now world famous, can be found in a variety of sources, and is also excerpted later in this section.

An important component of the APA Delphi Study was the discussion of the dispositional side of the critical thinker. One must be disposed to think critically as well as have the skills to do so. The Delphi participants where a mixed disciplinary group, and among the participants were a cadre of philosophers who were well versed in the writings of the Greeks. Unlike those who took a cognitive science approach to the project, these philosophers contributed a definition of critical thinking that centered largely on the attributes of the person who demonstrated critical thinking. The emergence of the description of the ‘ideal critical thinker’ and all of the submitted subtext led to the insight that it would perhaps be incomplete to measure thinking skills while leaving out the personality component.

More than two decades of international research across disciplines affirms the importance of developing a strong critical thinking disposition. The CCTDI measures these attitudes and attributes, assessing the “willing” side of “willing and able to think well.” Its companion instruments, like the CCTST, measure the skills.

Notice the clear attitudinal expectations captured in the quote in the text by Peter Facione and Carol Gittens when they speak about the value of strong critical thinking. Of course the strong critical thinker needs to be able to analyze, infer and explain with confidence what to believe and what to do in key judgment situations, but without the fair-minded approach to inquiry that is the heart of critical thinking disposition, the exercise is too likely to fall short of the expected quality of judgment. In fact, the use of critical thinking may not even occur.

No longer taken for granted as a byproduct of all educational processes, the training of critical thinking skills is becoming an increasing focus of professional preparation programs. The assurance of excellence in professional judgment is the result of the sound use of critical thinking skills and the reliable and strong disposition to use those critical thinking skills. The alternative (acting without adequate analysis of the problem, repeating a previous decision behavior unreflectively, or continuing to carry out a protocol or process without evaluating its effect) is not an acceptable quality standard in and professional workplace, nor does it bode well for life decisions in general.

Equally necessary, is the training of habits of mind consistent with the dispositional side of strength in thinking. The CCTDI offers a way to assess the success of these training efforts.

---

2 Dewey, J. (1933). "If we were compelled to make a choice between these personal attributes and knowledge about the principles of logical reasoning together with some degree of technical skill in manipulating special logical processes, we should decide for the former.” (p.34) How We Think: A Restatement of the Relation of Reflective Thinking to the Educational Process. Lexington, MA: D.C. Heath.

3 The complete account of the American Philosophical Association (APA) Delphi Study and the derived consensus definition of critical thinking is reported in the document entitled, “Critical Thinking: A statement of Expert Consensus for Purposes of Educational Assessment and Instruction” first published as ERIC Doc. NO.: ED 315 423, 1990. It is republished in a variety of formats and available as a publication of Insight Assessment / The California Academic Press. The executive summary of this document is available as a free download on the website: www.insightassessment.com.

Critical Thinking Skills and Habits of Mind (Mindset)

The Importance of Being both Willing and Able to Think Well: Critical thinkers must be both willing and able to think critically in the course of making decisions. It is possible to have strong critical thinking skills that are not being applied to decisions and problem solving. Possessing the requisite cognitive skills is necessary to being a good critical thinker, but so is being disposed to value and use those skills. The CCTST (California Critical Thinking Skills Test) is often administered in combination with the CCTDI to assess both the critical thinking skills and the habits of mind in students and practicing professionals. Before the CCTDI was available to measure thinking habits of mind, many assumed that strength in the disposition toward critical thinking would be strongly correlated with strength in critical thinking skills. Not true. Certainly many individuals are both disposed (willing) to address problems using critical thinking and skilled (able) to do so. But some individuals demonstrate skills to a much higher level (and they fail to engage problems unless heavily prompted to do so), and other understand and endorse the value good thinking but do not possess (or seek to possess) strong critical thinking skills.

Characteristics of Strong Critical Thinkers
From the APA Delphi Report

- inquisitive with regard to a wide range of issues
- concerned to become and remain well-informed
- alert to opportunities to use critical thinking
- trusting in the processes of reasoned inquiry
- self-confident in their reasoning skills
- open-minded regarding divergent world views
- flexible when considering alternatives and opinions
- understanding of the opinions of other people
- fair-minded when appraising reasoning
- honest in facing biases, prejudices, stereotypes, or egocentric tendencies
- prudent in suspending, making or altering judgments
- willing to reconsider and revise views where honest reflection suggests that change is warranted
The APA Delphi Consensus Definition of Critical Thinking

The California Critical Thinking Disposition Inventory (CCTDI) is the premier critical thinking disposition instrument in the world today. Based on the Delphi Expert Consensus Definition of Critical Thinking description of the ideal critical thinker, this instrument has been used in decades of empirical and conceptual studies of human reasoning behavior. The importance of the dispositional side of critical thinking was described by the Delphi experts in these terms:

Cognitive skills are like physical skills -- through education, training and exercise an individual can gain greater proficiency in their use. But the opportunities individuals have had during their lives to train, apply and refine those skills may differ vastly. Opportunities to learn often go unused in those who do not have the habits of mind associated with self-motivated learning. Many people learn only what they think they need to learn to achieve their goals. Their judgment may be wrong about what is needed.

Engaging problems and making decisions using critical thinking involves both skills and habits of mind. A strong critical thinker is one who is disposed to think critically and has the skills to do so.

Just as skills assessments measure core cognitive skills (abilities), disposition instruments measure attributes. These are also called traits or mindset, and they can be used to describe a person in terms of their inclination to use critical thinking, in contrast to other strategies, when faced with problems to solve, ideas to evaluate, or decisions to make. Research indicates that the disposition toward critical thinking can be understood in terms of positive habits of mind. A person or group strongly disposed toward critical thinking is habitually truth-seeking, open-minded, analytical, systematic, inquisitive, confident in reasoning, and judicious.

APA Delphi panel of international experts defined “critical thinking” for purposes of training and measurement as follows: “Critical thinking is the process of purposeful, self-regulatory judgment. This process gives reasoned consideration to evidence, context, conceptualizations, methods, and criteria.” This powerful two sentence definition is the heart of the American Philosophical Association Delphi Consensus. A very detailed and comprehensive definition of the skills and habits of mind associated with strength in critical thinking emerged from this multiyear study and was published in 1990 (ERIC Doc No ED 315 423 1990).

To this we would add, “Critical thinking is using this process of purposeful, reflective judgment to decide in a thoughtful, truth-seeking and fair-minded way what to believe or what to do.” In the absence of critical thinking, one might simply follow the demands of authority, act without a full awareness of the situation, thoughtlessly do what has been done before, or do nothing when action is needed.

---


6 Appendices 1 and 2 include a full discussion of the research to define the construct of critical thinking skills and disposition measured by the CCTSI family of test Instruments.

7 Scholars: Consult Section 5 of this User guide for a subset of these independent research studies. Also consult dissertation abstracts for completed dissertation studies.
The impetus for the Delphi study was an increasing tendency to use the term *critical thinking* to refer to any type of thinking associated with a positive outcome. Experts in the field were aware that building strength in critical thinking was not an automatic result of every educational offering. The APA Delphi study facilitated the discussion of experts from across the disciplines regarding the meaning of the term critical thinking and the thinking skills associated with this term. The study's lead researcher (P. Facione), using the Delphi method developed by the Rand Corporation, obtained objective input regarding the definition of critical thinking from scholars across the disciplines who were blinded to the source of the input. Unexpectedly, the resulting consensus included both a description of the relevant thinking skills and a description of the mental disposition of someone regarded as having strength in critical thinking.

This work subsequently provided a framework for a national discussion of the meaning and importance of critical thinking among employers, educators and policymakers. In this second, federally funded study spearheaded by Penn State University, the national sample of employers, educators and policymakers endorsed both the description of critical thinking skills and the description of the ideal critical thinker (disposition) as what was needed in US workers, students and leaders. Often referred to as the APA Delphi Consensus Definition of critical thinking, this consensus definition document has proven to be meaningful in educational institutions, government agencies and business organizations around the world.

Today, for some, the term is nearly synonymous with informal logic, for others an alternative way to describe scientific reasoning or rhetorical analysis, and for yet others it is a synonym for clinical reasoning or professional judgment. In all of these varying cases and differing disciplines, critical thinking is the major component of problem definition and reflective judgment processes across all contexts.

This section is a relatively short answer to the question: "What is meant by the term critical thinking?" If a more complete discussion is desired, refer to the Topics of Interest Section of this assessment manual. The well-known description of critical thinking skills (APA Delphi Report, Table 4) and the definition of the "ideal critical thinker" is included there. That discussion also provides a more complete account of the origin of this now global description of critical thinking and how it has been embraced by professionals, educators and civic leaders around the world.

Critical thinking is the process of purposeful, reflective judgment focused on deciding what to believe or what to do. Critical thinking is a pervasive human phenomenon. Many times each day, we analyze information, interpret events and situations, and evaluate claims and the reasons offered in their support. Based on those analyses, interpretations and evaluations, we draw inferences and make reflective judgments about what to believe and what to do. These reflective judgments are the focus of critical thinking. *The California Critical Thinking Skills Test* measures these critical thinking skills, assessing the test taker's strength in making reflective, reasoned judgments.

### A Theoretical Model of Critical Thinking Disposition (Mindset)

The empirical analyses involved in the development of the CCTDI instrument (discussed in Section 5) effectively reduced the APA Delphi Study discursive description of the ideal critical thinker from nineteen independent, descriptive phrases endorsed by consensus to seven dispositional constructs measurable by scales. In an important respect, the CCTDI refines and extends the conceptualization of critical thinking expressed in The Delphi Report. These constructs have since been endorsed as descriptive of the attributes of someone who is a critical thinker by educators and a wide range of working professionals in the United States and in more than 40 countries around the world.
“Critical Thinking: What It Is and Why It Counts,” Peter Facione, is an essay written for students, trainees, teachers, staff development educators and the general public. This easy to read essay communicates the importance of critical thinking in all aspects of life. This essay is updated periodically to include new research on human reasoning. Many publications have included this essay and it is a link on many websites. A free download of the most recent version, for purposes of education and educator training, can be found on our website: www.insightassessment.com.