

Critical thinking is a process, a purposeful and reflective process of problem solving and decision making, aimed at making a reasoned judgment about what to believe or what to do. In forming this judgment a person employs their critical thinking skills. These skills are described in detail, with examples, in the 1990 APA Delphi Report which presented an expert consensus conceptualization of critical thinking.

Download the executive summary from <http://www.insightassessment.com/CT-Resources/Expert-Consensus-on-Critical-Thinking/Delphi-Consensus-Report-Executive-Summary-PDF/%28language%29/eng-US>

Here is Table 4 from the APA Delphi Report

CONSENSUS DESCRIPTIONS OF CORE CT SKILLS AND SUB-SKILLS

- Interpretation
- Analysis
- Inference
- Explanation
- Evaluation
- Self-Regulation



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1. INTERPRETATION: To comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures or criteria.

1.1 CATEGORIZATION:

- to apprehend or appropriately formulate categories, distinctions, or frameworks for understanding, describing or characterizing information.
- to describe experiences, situations, beliefs, events, etc. so that they take on comprehensible meanings in terms of appropriate categorizations, distinctions, or frameworks.

For example: to recognize a problem and define its character without prejudice to inquiry; to determine a useful way of sorting and sub-classifying information; to make an understandable report of what one experienced in a given situation; to classify data, findings or opinions using a given classification schema.

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1.2 DECODING SIGNIFICANCE:

- to detect, attend to, and describe the informational content, affective purport, directive functions, intentions, motives, purposes, social significance, values, views, rules, procedures, criteria, or inferential relationships expressed in convention-based communication systems, such as in language, social behaviors, drawings, numbers, graphs, tables, charts, signs and symbols.

For example: to detect and describe a person's purposes in asking a given question; to appreciate the significance of a particular facial expression or gesture used in a given social situation; to discern the use of irony or rhetorical questions in debate; to interpret the data displayed or presented using a particular form of instrumentation.

1.3 CLARIFYING MEANING:

- to paraphrase or make explicit, through stipulation, description, analogy or figurative expression, the contextual, conventional or intended meanings of words, ideas, concepts, statements, behaviors, drawings, numbers, signs, charts, graphs, symbols, rules, events or ceremonies.
- to use stipulation, description, analogy or figurative expression to remove confusing, unintended vagueness or ambiguity, or to design a reasonable procedure for so doing.

For example: to restate what a person said using different words or expressions while preserving that person's intended meanings; to find an example which helps explain something to someone; to develop a distinction which makes clear a conceptual difference or removes a troublesome ambiguity.

2. ANALYSIS: To identify the intended and actual inferential relationships among statements, questions, concepts, descriptions or other forms of representation intended to express beliefs, judgments, experiences, reasons, information, or opinions.

2.1 EXAMINING IDEAS:

- to determine the role various expressions play or are intended to play in the context of argument, reasoning or persuasion
- to define terms
- to compare or contrast ideas, concepts, or statements
- to identify issues or problems and determine their component parts, and also to identify the conceptual relationships of those parts to each other and to the whole.

For example: to identify a phrase intended to trigger a sympathetic emotional response which might induce an audience to agree with an opinion; to examine closely related proposals regarding a given problem and to determine their points of similarity and divergence; given a complicated assignment, to determine how it might be broken up into smaller, more manageable tasks; to define an abstract concept.

2.2 DETECTING ARGUMENTS:

- given a set of statements, descriptions, questions or graphic representations, to determine whether or not the set expresses, or is intended to express, a reason or reasons in support of or contesting some claim, opinion or point of view.

For example, given a paragraph, determine whether a standard reading of that paragraph in the context of how and where it is published, would suggest that it presents a claim as well as a reason or reasons in support of that claim; given a passage from a newspaper editorial, determine if the author of that passage intended it as an expression of reasons for or against a given claim or opinion; given a commercial announcement, identify any claims being advanced along with the reasons presented in their support.

2.3 ANALYZING ARGUMENTS:

- given the expression of a reason or reasons intended to support or contest some claim, opinion or point of view, to identify and differentiate:
- the intended main conclusion,

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- the premises and reasons advanced in support of the main conclusion,
- further premises and reasons advanced as backup or support for those premises and reasons intended as supporting the main conclusion,
- additional unexpressed elements of that reasoning, such as intermediary conclusions, unstated assumptions or presuppositions,
- the overall structure of the argument or intended chain of reasoning, and
- any items contained in the body of expressions being examined which are not intended to be taken as part of the reasoning being expressed or its intended background.

For example: given a brief argument, paragraph-sized argument, or a position paper on a controversial social issue, to identify the author's chief claim, the reasons and premises the author advances on behalf of that claim, the background information used to support those reasons or premises, and crucial assumptions implicit in the author's reasoning; given several reasons or chains of reasons in support of a particular claim, to develop a graphic representation which usefully characterizes the inferential flow of that reasoning.

3. EVALUATION: To assess the credibility of statements or other representations which are accounts or descriptions of a person's perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions or other forms of representation.

3.1 ASSESSING CLAIMS:

- to recognize the factors relevant to assessing the degree of credibility to ascribe to a source of information or opinion
- to assess the contextual relevance of questions, information, principles, rules or procedural directions
- to assess the acceptability, the level of confidence to place in the probability or truth of any given representation of an experience, situation, judgment, belief or opinion.

For example: to recognize the factors which make a person a credible witness regarding a given event or credible authority on a given topic; to determine if a given principle of conduct is applicable to deciding what to do in a given situation; to determine if a given claim is likely to be true or false based on what one knows or can reasonably find out.

3.2 ASSESSING ARGUMENTS:

- to judge whether the assumed acceptability of the premises of a given argument justify one's accepting as true (deductively certain), or very probably true (inductively justified), the expressed conclusion of that argument
- to anticipate or to raise questions or objections, and to assess whether these point to significant weakness in the argument being evaluated
- to determine whether an argument relies on false or doubtful assumptions or presuppositions and then to determine how crucially these affect its strength
- to judge between reasonable and fallacious inferences
- to judge the probative strength of an argument's premises and assumptions with a view toward determining the acceptability of the argument
- to determine and judge the probative strength of an argument's intended or unintended consequences with a view toward judging the acceptability of the argument
- to determine the extent to which possible additional information might strengthen or weaken an argument.

For example: given an argument to judge if its conclusion follows either with certainty or with a high level of confidence from its premises; to check for identifiable formal and informal fallacies; given an objection to an argument to evaluate the logical force of that objection; to evaluate the quality and applicability of analogical arguments; to judge the logical strength of arguments based on hypothetical situations or causal reasoning; to judge if a given argument is relevant or applicable or has implications for the situation at hand; to determine how possible new data might lead logically to the further confirmation or disconfirmation of a given opinion.

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4: INFERENCE: To identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to deduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation.

4.1 QUERYING EVIDENCE:

- in particular, to recognize premises which require support and to formulate a strategy for seeking and gathering information which might supply that support
- in general, to judge that information relevant to deciding the acceptability, plausibility or relative merits of a given alternative, question, issue, theory, hypothesis, or statement is required, and to determine plausible investigatory strategies for acquiring that information.

For example: when attempting to develop a persuasive argument in support of one's opinion, to judge what background information it would be useful to have and to develop a plan which will yield a clear answer as to whether or not such information is available; after judging that certain missing information would be germane in determining if a given opinion is more or less reasonable than a competing opinion, to plan a search which will reveal if that information is available.

4.2 CONJECTURING ALTERNATIVES:

- to formulate multiple alternatives for resolving a problem,
- to postulate a series of suppositions regarding a question, to project alternative hypotheses regarding an event, to develop a variety of different plans to achieve some goal
- to draw out presuppositions and project the range of possible consequences of decisions, positions, policies, theories, or beliefs.

For example: given a problem with technical, ethical or budgetary ramifications, to develop a set of options for addressing and resolving that problem; given a set of priorities with which one may or may not agree, to project the difficulties and the benefits which are likely to result if those priorities are adopted in decision making.

4.3 DRAWING CONCLUSIONS:

- to apply appropriate modes of inference in determining what position, opinion or point of view one should take on a given matter or issue.
- given a set of statements, descriptions, questions or other forms of representation, to deduce, with the proper level of logical strength, their inferential relationships and the consequences or the presuppositions which they support, warrant, imply or entail.
- to employ successfully various sub-species of reasoning, as for example to reason analogically, arithmetically, dialectically, scientifically, etc.
- to determine which of several possible conclusions is most strongly warranted or supported by the evidence at hand, or which should be rejected or regarded as less plausible by the information given

For example: to carry out experiments and to apply appropriate statistical inference techniques in order to confirm or disconfirm an empirical hypothesis; given a controversial issue to examine informed opinions, consider various opposing views and the reasons advanced for them, gather relevant information, and formulate one's own considered opinion regarding that issue; to deduce a theorem from axioms using prescribed rules of inference.

5: EXPLANATION: To state the results of one's reasoning; to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological and contextual considerations upon which one's results were based; and to present one's reasoning in the form of cogent arguments.

5.1 STATING RESULTS:

- to produce accurate statements, descriptions or representations of the results of one's reasoning activities so as to analyze, evaluate, infer from, or monitor those results.

For example: to state one's reasons for holding a given view; to write down for one's own future use one's current thinking about an important or complex matter; to state one's research findings; to convey

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one's analysis and judgment regarding a work of art; to state one's considered opinion on a matter of practical urgency.

5.2 JUSTIFYING PROCEDURES:

- to present the evidential, conceptual, methodological, criteriological and contextual considerations which one used in forming one's interpretations, analyses, evaluation or inferences, so that one might accurately record, evaluate, describe or justify those processes to one's self or to others, or to remedy perceived deficiencies in the general way one executes those processes.

For example: to keep a log of the steps followed in working through a long or difficult problem or scientific procedure; to explain one's choice of a particular statistical test for purposes of data analysis; to state the standards one used in evaluating a piece of literature; to explain how one understands a key concept when conceptual clarity is crucial for further progress on a given problem; to show that the prerequisites for the use of a given technical methodology have been satisfied; to report the strategy used in attempting to make a decision in a reasonable way; to design a graphic display which represents the quantitative or spatial information used as evidence.

5.3 PRESENTING ARGUMENTS:

- to give reasons for accepting some claim.
- to meet objections to the method, conceptualizations, evidence, criteria or contextual appropriateness of inferential, analytical or evaluative judgments.

For example: to write a paper in which one argues for a given position or policy; to anticipate and to respond to reasonable criticisms one might expect to be raised against one's political views; to identify and express evidence and counter-evidence intended as a dialectical contribution to one's own or another person's thinking on a matter of deep personal concern.

6: SELF-REGULATION: Self-consciously to monitor one's cognitive activities, the elements used in those activities, and the results deduced, particularly by applying skills in analysis and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting either one's reasoning or one's results.

6.1 SELF-EXAMINATION:

- to reflect on one's own reasoning and verify both the results produced and the correct application and execution of the cognitive skills involved
- to make an objective and thoughtful meta-cognitive self-assessment of one's opinions and reasons for holding them
- to judge the extent to which one's thinking is influenced by deficiencies in one's knowledge, or by stereotypes, prejudices, emotions or any other factors which constrain one's objectivity or rationality
- to reflect on one's motivations, values, attitudes and interests with a view toward determining that one has endeavored to be unbiased, fair-minded, thorough, objective, respectful of the truth, reasonable, and rational in coming to one's analyses, interpretations, evaluations, inferences, or expressions.

For example: to examine one's views on a controversial issue with sensitivity to the possible influences of one's personal bias or self-interest; to review one's methodology or calculations with a view to detecting mistaken applications or inadvertent errors; to reread sources to assure that one has not overlooked important information; to identify and review the acceptability of the facts, opinions or assumptions one relied on in coming to a given point of view; to identify and review one's reasons and reasoning processes in coming to a given conclusion.

6.2 SELF-CORRECTION:

- where self-examination reveals errors or deficiencies, to design reasonable procedures to remedy or correct, if possible, those mistakes and their causes.

For example: given a methodological mistake or factual deficiency in one's work, to revise that work so as to correct the problem and then to determine if the revisions warrant changes in any position, findings, or opinions based thereon.

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