

## **Critical Thinking or What makes Thinking Critical?!** **Concept (in progress)**

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### **Thinking on Thinking ...**

Much has been said and written during the past years about the term “critical thinking”. Many definitions can be found today on Internet as well as in the printed media on the meaning of this term. Most of the definitions for the “critical thinking” are often too broad and general, and one can easily find overlaps and even contradictions in some of them, particularly contradictions related to the meaning of “critical thinking” and other types thinking. One of the main challenges in analyzing these definitions and explanations on critical thinking, is understanding what makes thinking really critical?!

After having conducted a throughout analyses and practical work for several years in the field of critical thinking, here are the main conclusions of the authors on this paper:

1. Critical thinking is **a type of thinking**;
2. Any type of Thinking is a set of specific cognitive processes, which can be observed or demonstrated through a certain way/type of “communication” with others;
3. The main distinguishing criteria between different types of thinking is the main **value** that guides towards selecting specific cognitive tools during the cognitive/learning process;
4. The main **value behind critical thinking is freedom**. Freedom is the capacity of an individual to make decisions based on personal values and thus, not being influenced by the others. This does not mean that values can not change as we progress, learn or develop – indeed, they change and presuppose a certain degree of flexibility based on self-awareness. A Critical thinker treats each situation differently and an unique manner: 1) He/she decides on his/her value in/for that particular situation and 2) decides on the actions to undertake based on this particular value;
5. **Critical Thinking** is a set of specific cognitive tools (based on general cognitive skills) applied at each level of cognitive process, selected intuitively or purposefully in order to take an independent decision (based on personal values.)
6. **Critical Thinking** is a core-competence, supported by several sub-competences such as “Critical data acquisition”, “Critical Comprehension”, “Critical Analyses”, “Critical Synthesis”, “Critical Evaluation”, “Meta-cognition” and “Critical Communication”.

### **What makes thinking “critical”?!**

While some positions on critical thinking state that one needs to be able to “climb Bloom’s pyramid of cognitive thinking levels to become a critical thinker.[http://www.ehow.com/about\\_6233382\\_bloom\\_s-relate-critical-thinking-information\\_.html](http://www.ehow.com/about_6233382_bloom_s-relate-critical-thinking-information_.html)“, we strongly believe that each cognitive level of Bloom’s Taxonomy serves as a basis for thinking in general, and can become “critical” with some preconditions.

- a) The first cognitive level, according to Bloom’s Taxonomy is **Knowledge level: Recall data or information**. How is then this level “critical”?!
- b)

“**Critical**” **Knowledge** level or data/information acquisition is the capacity of the individual to identify problems in non-problematic situations and to identify alternative sources of information, collect data from various/contradictory sources. With this capacity, the individual is able to protect himself/herself from stereotyping his/her own thinking and actions/behavior.

b) The second cognitive level, according to Bloom's Taxonomy is **Comprehension level**: understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words. How is then comprehension "critical"?!

**"Critical" Comprehension** or interpretation is the capacity of the individual to interpret the data form various and contradictory perspectives.

c) Next level of Bloom's Taxonomy is **Application**: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place. How can application become "critical"?

**"Critical" Application** is the capacity of the individual to anticipate the results of the actions taken and of the risks associated with these actions. Additionally, "critical" application is the capacity to test/experiment any given information or assumptions, to test and verify any data, conclusions or solutions in simulated/authentic situations.

d) The **Analysis** level according to Bloom separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences. Several theories state that critical thinking starts with analyses level. But what makes analyses "critical"?!

**"Critical" Analyses** is the capacity to recognize contradictions and any stated and unstated assumptions. Neutral (non-biased) identification and analysis of arguments and of any stated and unstated assumptions takes place at this level. This is the stage during which arguments are articulated while the assumptions aren't. The thinker identifies the assumptions and exteriorizes them by analyzing. While analyses of the arguments is common to any type of thinking, then in critical thinking assumptions are identified and they become arguments, thus, arguments become complemented by assumptions.

**Note:** assumptions remain assumptions as long as we are aware of them, the very moment we aren't aware of them, they turn into stereotypes.

e) According to Bloom's Taxonomy, **Synthesis** stage builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure. Still, how synthesis becomes 'critical'?!

**"Critical" Synthesis** is the capacity of the individual to identify at least 2 good solutions to any problem. A critical thinker does not act based on the first solution he/she identified (which is relevant and efficient), rather continues the thinking until one more solution is identified for the same problem/case.

Identification of at least 2 good solutions determines the thinker to avoid stereotypes (due to the fact that usually the first solution is a stereotyped one) and to deeply analyze and compare in order to find the second solution. There is a high probability that after two solutions were deeply analyzed, a new one or even several other good/efficient solutions can emerge.

f) **Evaluation** is the final stage in Bloom's Taxonomy: Make judgments about the value of ideas or materials. Is a thinker who reaches this stage a critical thinker? Or Evaluation can also be "critical"?!

**"Critical" Evaluation** is the capacity to formulate arguments from different values' perspectives. The critical thinker is capable to evaluate solutions/conclusions from multiple perspectives. This stage coincides with the last stage of decision making process. The decision made is "reasoned" from the prism of concrete value relevant for the given situation.

It is important to mention that in addition to the above sub-competences, any individual needs "Critical Meta cognition" and "Critical Communication" sub-competences in order to become a real Critical Thinker!

**“Critical Meta cognition”** is the capacity to monitor and evaluate cognitive processes and successes/failures related to personal goals. Here, the individual has the capacity to recognize lack of any personal cognitive skills and capacity to postpone the cognition till more data or appropriate cognitions are available.

**“Critical Communication”** is about the ability of the individual to present arguments. This skill involves clear communication and justification of the results of one’s own reasoning. A Critical Thinker is able to explain the results of his/her reasoning to various target groups by adjusting the message accordingly. A Critical Thinker is using multiple communication systems in order to enhance his/her message.

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