

# CRITICAL THINKING

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*LifestyleLiving.org*

*Nancy Yang*

Critical thinking is the art of filtering through information to reach an unbiased, logical decision that guides better thought and action. It can be learned through powerful ideas listed in this article.

Before you read further, it is important for you to know that critical thinking is a state of mind, not a tool or strategy.

Once you learn the techniques listed and start employing them in your daily life, you'll quickly start to notice a change in the way you approach problems and consequently, how you resolve them too.

## 1 Mathematical Thinking

Mathematical thinking is the gathering and breaking down of information into small bites that help make sense of it.

To use it for critical thinking:

- Be very clear on why you need the information. This is to recognize your limitations and employ foresight to overcome them.
- Gather information from as many sources as you can: peers and experts, podcasts, relevant literature and any other place you can think of.
- Rephrase questions multiple times to get different perspectives on data available and possibly arrive at different solutions.
- Break down the data into factual subsets and relate each to the issue at hand.
- Think on paper to make new connections. Write, doodle, make mind-maps or use spreadsheets. Data presented visually can help you make new connections make sense of emerging patterns.
- Tidy up the workplace. Once data has been gathered, your workspace and your brain will both be cluttered with excess information.
- Neaten the physical space and clear your mind with meditation. The change in focus will help you view the information in a new light, potentially helping you reach newer, better conclusions.

## 2 Relationships

Relationships are a key element for critical thinking as it gives you access to the thoughts of people around you.

Data can be communicated through audio and visual means and in many cases, through careful observation of body language:

- Ask for different points of view and seek justification for the same thing. When you invest in the matter, you will be able to explore all options to reach the best solution.
- Listening without interrupting and only asking questions or voicing concerns once the speaker is done helps you make better connections.
- Be 100
- Paraphrase the speaker/writer's point of view and ask for affirmation. This enables you to pay full attention and use the input to think critically.

- In a meeting, subtle communication cues are given by the body language of fellow attendees. An imperceptible frown, a small nod, pencil tapping etc. will all give you clues to what they are really thinking, just in case their actions are not in sync with their words!
- Active observation, where you are watching and listening intently helps you know what to make of the information that is being passed around. It gives you clues to the general opinion about the topic under discussion and opens up new possibilities.

The information you gather through such communication will be invaluable in thinking critically to arrive at a decision that is holistic and unbiased.

### 3 Artistic Thinking

To really learn critical thinking, you need to include elements of artistic thinking in the process!

- Brainstorm with your team in an all-new location or work-shadow an industry expert to step out of your comfort zone. You could be surprised by the ideas that flow at a picnic or a game of billiards!
- Gather data and tabulate it in the form of colorful, eye-catching charts, graphs and mind maps. The simple exercise makes your mind bring data together in different ways and presents them so multiple unique conclusions can be reached, giving you the flexibility to choose the best one.
- Play brain games such as Sudoku or chess to appreciate how different factors can be manipulated to reach a preferred outcome. These games help make connections between previously disconnected nerves, giving your brain the power to find multiple pathways to answering problems.
- In a similar vein, you can forge new neural connections by learning a new skill, a new language or even a new recipe!

If you want to be good at critical thinking, you need to adopt artistic thinking!

### 4 Free Thought

Keep your mind open and free to new ideas.

To get an idea,

- Be brutally honest about your strengths and weaknesses, and how these will impact the matter at hand.
- Hear an opinion that conflicts with your own without forming a response before the opinion is fully voiced.
- Acknowledge that there may be more than one approach to solving a problem and that they may all be right in some way.
- Consider your true feelings when you will implement any required changes.
- Disregard your long-held beliefs and assumptions and let go of habits.
- Imagine the decision-making factors placed on weighing scales. Are they balanced?

Free thought is a powerful technique for critical thinking. New possibilities can be uncovered, helping you resolve personal and professional matters in a manner that doesn't frustrate you or alienate the other party.

## 5 Handling Issues

Critical thinking is heavily dependent on handling issues. An effective critical thinker will be able to handle issues with the foresight to anticipate roadblocks and negative outcomes, and the experience and presence of mind to resolve them quickly and move on.

One of the most effective methodologies is the 5 Whys Analysis. Invented by Sakichi Toyoda, the founder of Toyota Motors in the 1950s, it has been used successfully by the automobile giant to get to the root cause of problems.

The idea behind this is simple: start with the end problem and keep asking why until you get to the root cause of it.

The general idea is that asking why 5 times from the effect is enough to get to the cause, hence the name. However, the methodology does not limit the questions to 5, and why can be asked as many times as need to peel away the layers until a satisfactory answer is reached.

To use the 5 Whys Analysis, start off by listing the problem and writing why in front of it. The next point in the list should be answered to the first why with another why in front of it. Continue answering the question asked above followed by a why until you've asked the question 5 times and answered it six times. 99% of the time, the last answer will be the root cause of the problem stated in the first point.

For example, consider a commonly given scenario where a vehicle does not start.

1. Vehicle will not start. Why?
2. Battery is dead. Why?
3. The alternator is not functioning. Why?
4. The alternator belt has broken. Why?
5. It was old and worn out. Why?
6. The car is not maintained according to manufacturer's recommendation.

By this example, it is clearly demonstrated that 5 whys were asked to reach the root cause of the problem.

The 5 techniques discussed here are important for effective critical thinking. When employed regularly they will become a habit and will definitely improve your critical thinking skills so you can get better at predicting and resolving issues that concern you and your environment.

Over the years, the 5 Whys Analysis has been adopted by millions to reach the root cause of their personal and professional problems. Industry giant Six Sigma has also incorporated the 5x Why Analysis in the Analyze phase of their DMAIC methodology.

## 6 Conclusion

Is critical thinking a new-fangled notion? Not at all. Its history can be traced back to Socrates who questioned commonly held beliefs. This practice was carried forward by leading scholars and thinkers from different times such as Aristotle and Plato, Colet and Moore, Descartes, Galileo and Newton.

Today's world is dependent on critical thinking to resolve all sorts of issues. It is now indispensable for issues ranging from personal relationships to professional jobs and those involving the global community.

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