**Critical and reflective thinking**

**Honing your critical thinking skills can open up a lifetime of intellectual curiosity. Critical thinking entails examining the arguments for and against a piece of knowledge or information in light of the evidence that supports it. Consider an issue carefully. Examine evidence supporting the viewpoint, opinion or stance, and consider where this knowledge leads to. Which conclusions can follow, are they rational, and if not, how shall the viewpoint be adjusted?**

Reflective thinking involves examining a piece of information from varied perspectives for-

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| * accuracy and validity | * assumptions and clarity |
| * flaws in reasoning, evidence or conclusions | * logically following on from the statement before it hidden |

Thinking critically and reflectively should help you determine why one set of opinions is preferable over others. This will influence your reading and writing, as well as your listening.

Develop a *suspicious mind*. Read like a detective!

1. Identify the line of reasoning, point of view, position being defended and case being made.
2. Critically evaluate the line of reasoning and evidence for relevance and support, logic, false premises, generalisations and flaws, and that a valid conclusion is drawn.
3. Isolate the evidence in the text- statistics, case studies, data and surveys.
4. Question the evidence. Has all necessary information been given or might additional details lead you to conclude something else? Who gains if the conclusion is accepted? Question the source of the evidence- who paid for the studies; is there a hidden agenda?
5. Evaluate evidence using valid criteria:
   1. the date of the research
   2. the information source (professional journals vs. ‘authorities say..’
   3. be bias-savvy regarding your information source
   4. misleading statistics can sway a reader
   5. words like most/many, and percentages in relation to sample a size
   6. be aware of persuader words: ‘clearly’, ‘surely’, ‘obviously’, ‘of course’
6. Identify the writer’s conclusion/s. This is not always explicit and can be implied rather than stated. Determine whether or not the evidence supports the conclusion.

**DETECTIVES’ CHECKLIST:**

**Question your assumptions.** We make a lot of assumptions about almost everything. It's how we process certain pieces of information, and how we get along in everyday life. But what if those assumptions turned out to be wrong, or at least not entirely truthful? Then the whole foundation needs to be re-built, from the bottom up.

**Don't take information on authority until you've investigated it yourself.** Like assumptions, taking information on authority can be useful. Instead of double-checking everything anyone says, we tend to label information as either coming from a trustworthy or not trustworthy source. This keeps us from double-checking every piece of information that comes our way, saving time and energy. But it also keeps us from getting to the bottom of things we perceive as coming from a trustworthy source, even when they don't.

**Question things.** Asking questions is perhaps the quintessential act of critical thinking. If you don't know what questions to ask, or don't ask the questions in the first place, you may as well not get the answer. Finding the answer, and finding it elegantly, is what critical thinking is all about. **Understand your biases.** Human judgement is subjective, frail, and spiteful. Understand your biases and where they can affect how you deal with information.

**Think ahead.** Think beyond one or two steps ahead. Imagine you're a tennis player who's duelling with someone with the capacity to think several shots ahead, with hundreds of permutations. You have to match wits. Imagine the various possible futures the problem you're working on may take on.

**Put yourself in another’s shoes.** Empathy can also help you develop your critical thinking skills. Putting yourself in the shoes of others will help you imagine motivations, aspirations, and the turmoil of others.

When reading, writing and listening, ask:

* What is the main argument or line of reasoning?
* Is the line of reasoning clear in the introduction and in the conclusion?
* What key evidence supports the argument? Does the evidence presented develop the argument and lead to the conclusion?
* Is the evidence up-to-date? Is it relevant?
* Does the evidence sufficiently prove the case? Is anything missing?
* Is the evidence presented in a logical order?
* Are there flaws in the reasoning, or attempts to persuade the reader?
* Have alternative viewpoints been considered and provided?

