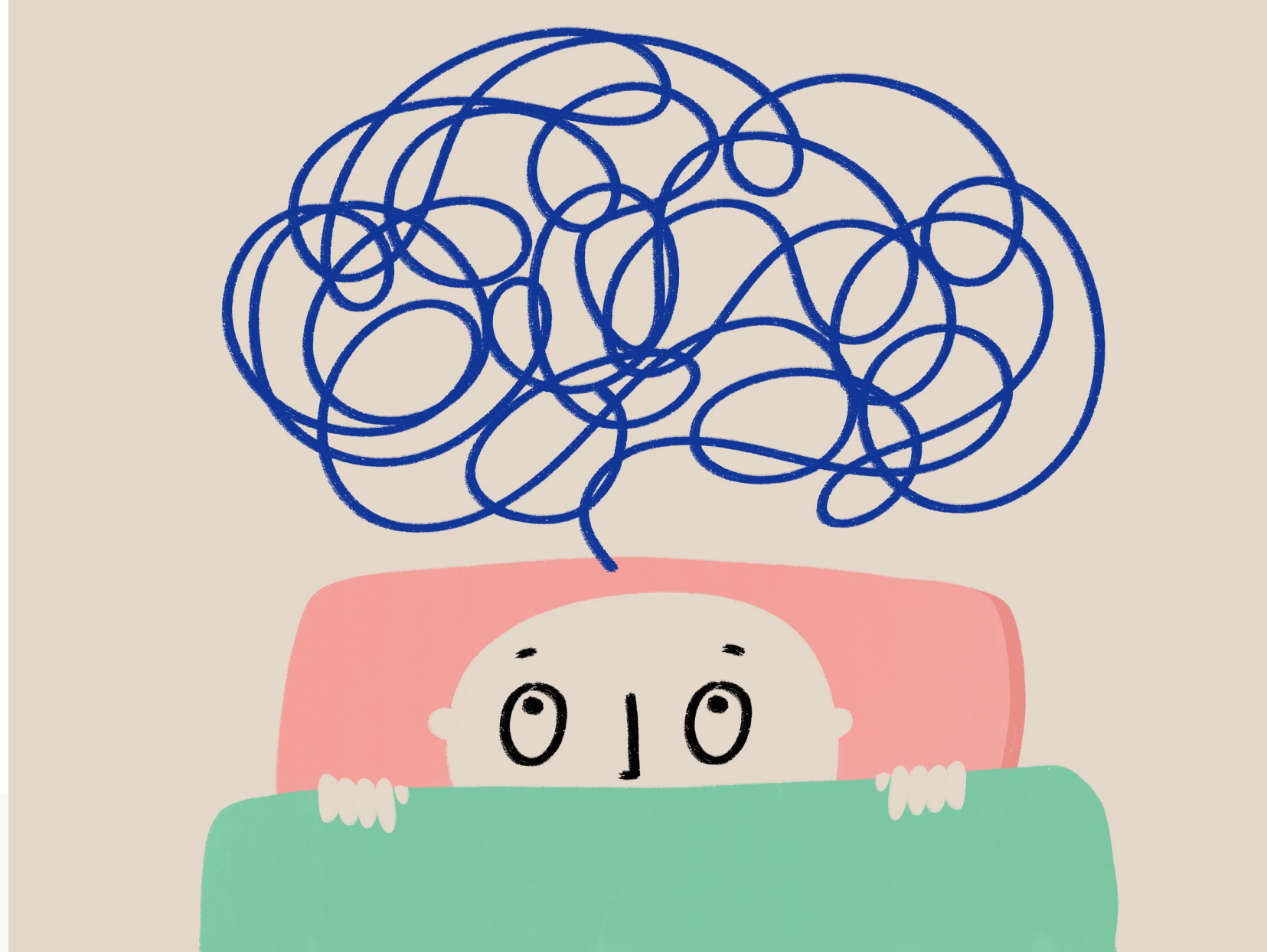


Developing critical thinking skills



Maria Hofman-Bergholm
PeL/RDI-expert
Centria University of Applied Sciences



**Euroopan unionin
osarahoitama**


**Elinvoimakeskus
Livskraftscentralen**

centria
University of Applied Sciences
ammattikorkeakoulu


AIM learning


**Kokkola
Karleby**

What is critical thinking?

➔ It is a fundamental skill that goes beyond the simple **acceptance** of information.

➔ It is the art of making clear, reasoned judgements by interpreting and understanding information.

(Oxford international college Brighton, 2025)



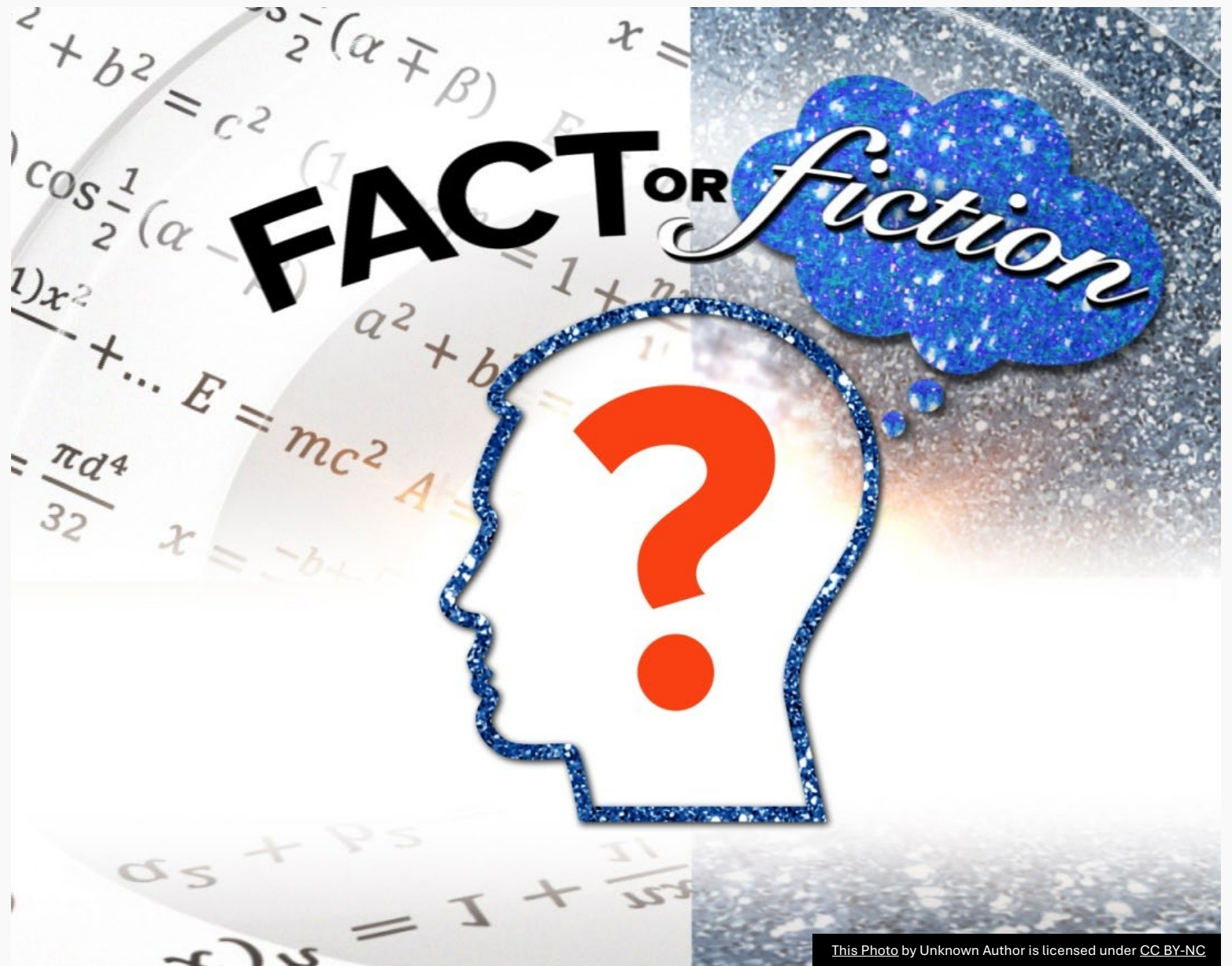
Critical thinking helps you to:

- Evaluate arguments
- Identify credible sources
- Compare perspectives
- Test hypotheses against criteria



Due to the constant flow of information today, it is of utmost importance to be able to distinguish between truth and fiction.

It's not about being negative, it's about thinking critically, logically, and independently.



Why is critical thinking necessary?

1. For navigating an information-rich society - critical thinking is essential for managing the volume of information, assessing the credibility of sources, and making rational decisions.

2. To make better decisions in daily life, at work, and in research.

3. To tackle complex problems - New research (2026*) emphasizes that critical thinking is essential for solving complex societal problems in an era of AI and disinformation.

(* [Frontiers | Perceptions, pedagogies, and challenges in critical thinking education. A faculty perspective](#))



Why is critical thinking necessary?

4. To succeed in education and/or the workplace. Critical thinking is one of the most fundamental academic goals and is required in all disciplines, from the natural sciences to the humanities.

5. To develop scientific and analytical thinking. Critical thinking and scientific thinking are distinct yet closely interlinked processes that reinforce one another and are central to civic education.



How to Train Your Critical Thinking Skills



Critical thinking isn't subject-specific, it's more about your ability to analyze information, data, statistics, and other details to find a satisfactory solution.

Critical thinking is ***the ability to gather and analyze information*** in order ***to reach a conclusion***.

To develop and train your critical thinking, you need to learn how to conduct relevant information!

Because critical thinking depends on content knowledge to evaluate arguments and learning to detect reasoning flaws.

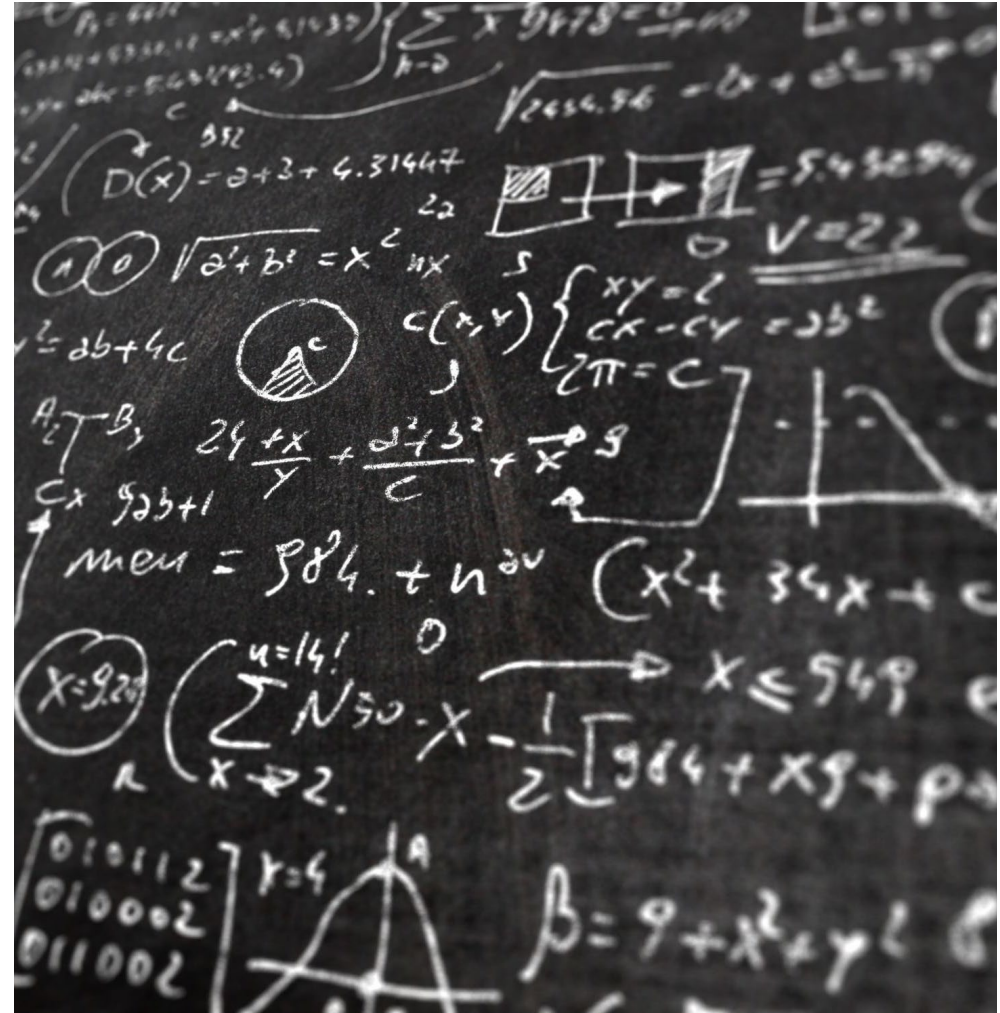


Determine the relevance of the data.

Just as it is important to collect different types of information, it is also important to determine how relevant the various sources of information are. Just because data exists doesn't mean it's relevant.

When you have gathered all the information, it is time to filter it and determine how relevant it is.

Compiling all this information and assessing its significance helps you weigh different sources of information against one another and arrive at the best conclusion later in the critical thinking process.



Ask yourself these questions to determine the relevance of information:

How reliable is this information?

How significant is this information?

Is this information outdated?

Is it specialized in a particular field?

One of the most valuable aspects of critical thinking is **reaching a decision free of bias**. To do this, you need to step back from the process and **question the assumptions you make**.



We all have biases, and that isn't necessarily a bad thing.

Unconscious biases (also known as cognitive biases) often act as mental shortcuts to simplify problem-solving and facilitate decision-making.

But even though biases aren't bad in and of themselves, you need to be aware of your biases in order to set them aside when necessary.

Before arriving at a solution, you should ask yourself: Am I making any assumptions about this information? Are there additional variables I haven't taken into account? Have I evaluated the information from all perspectives? Are there any points of view I've missed?



Finally, you're ready to draw a conclusion.

To find the best solution, you should examine the relationship between cause and effect. Use the facts you've gathered to evaluate the most objective conclusion.

Keep in mind that there may be more than one solution. Often, the problems you face are complex and intricate.

The critical thinking process does not necessarily lead to a single, clear-cut solution, but it helps you understand the various variables at play so that you can make an informed decision.



Training in structured source evaluation improves your ability to detect weak arguments, biased framing, and unsupported conclusions.

By consistently applying a small set of guiding questions, you as a reader can significantly improve the depth and quality of your understanding across disciplines.



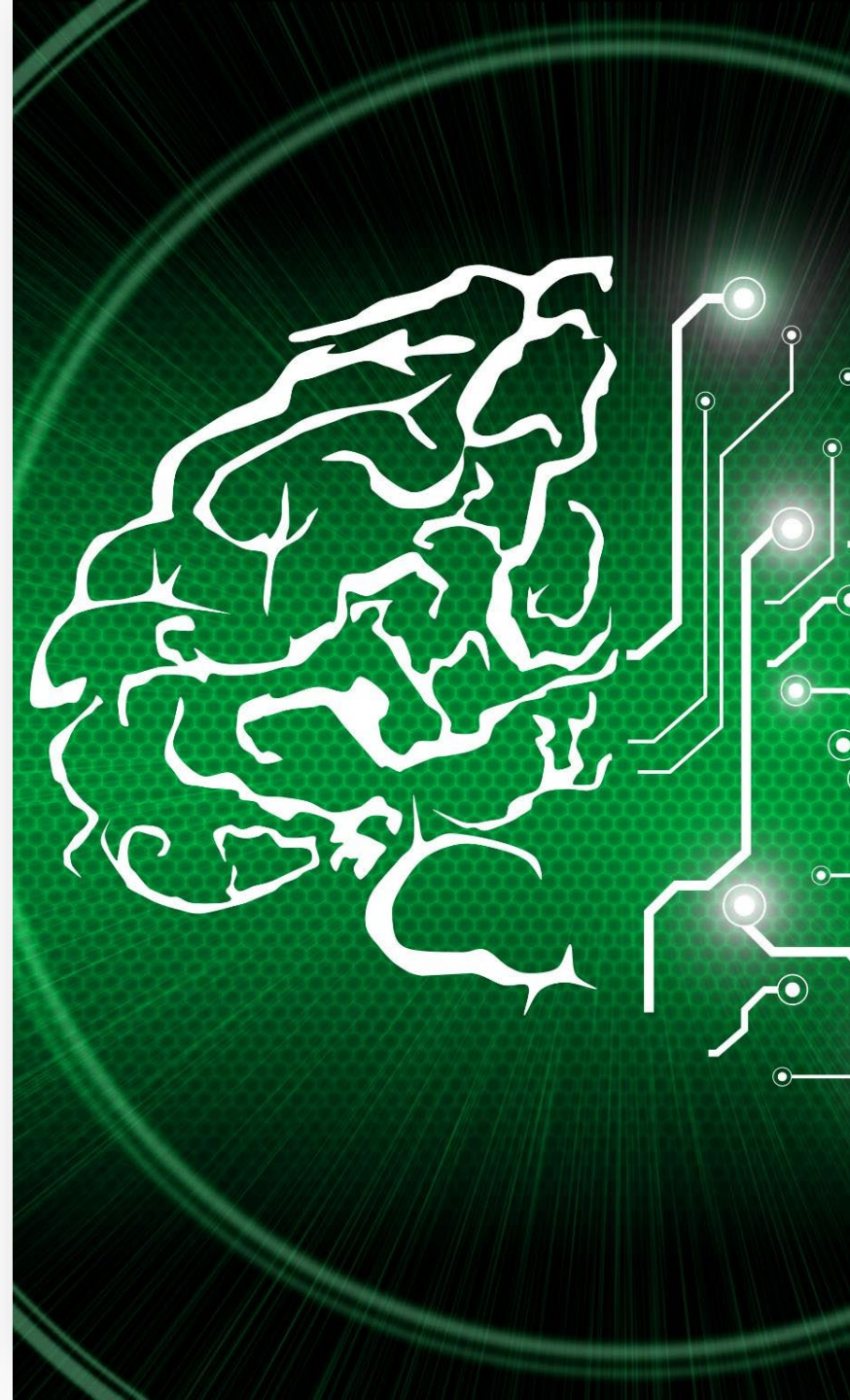
Cognitive and Environmental Challenges to Critical Thinking

Despite its importance, critical thinking is cognitively demanding and often undermined by both mental shortcuts and environmental pressures.

Cognitive psychology shows that humans rely heavily on fast, automatic patterns of thinking that are efficient but error-prone.

Biases such as confirmation bias lead individuals to favour information that aligns with existing beliefs, while availability bias causes people to overestimate the importance of information that is recent or emotionally vivid.

→ In modern information environments, these tendencies are amplified by digital technologies! Information overload encourages shallow processing rather than deep analysis, and algorithm-driven content feeds can reinforce echo chambers that limit exposure to alternative perspectives.



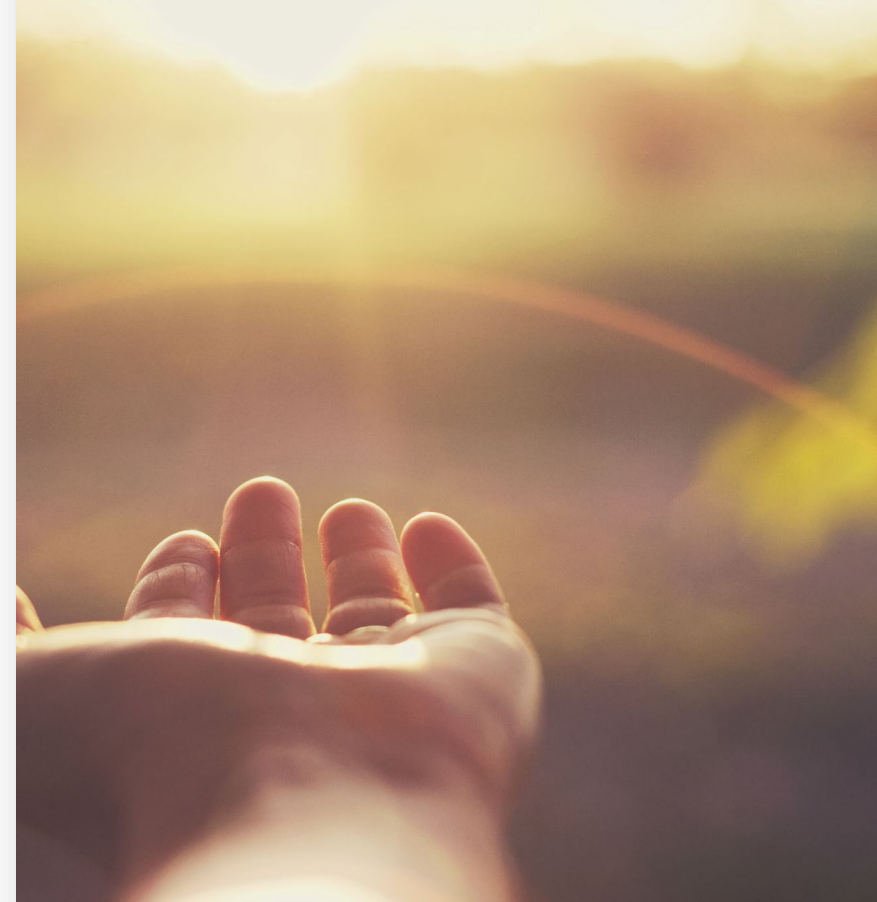
Practice the following habits to develop your critical thinking skills

(Tomperi, T., PeD, Tampereen Yliopisto:
<https://artpro.uniarts.fi/sv/material/kritiskt-tankande/>)

From time to time, you can consciously pause to reflect on your mindset and consider the ways of thinking and acting that you have adopted, engage in metacognitive self-reflection.

For example, do I take opinions more seriously from people who are more like me, are of the same (or opposite) gender, have higher status, are older, or are better dressed? In that case, my judgment isn't based solely on the content of their thoughts.

Do I divide the world into "us and them" based on nationality, party affiliation and ideology, personality, religion or disloyalty, or perhaps education? It is a human cognitive trait to structure the world into a black-and-white dichotomy, as it speeds up our orientation in the world, but at the same time it often distorts our judgments without us realizing it.



It is worth paying attention to the beliefs you consider most important. Sometimes it is good to question and reflect deeply on the fundamental assumptions about our worldview and way of life that we hold most dear.

Pausing in this way can lead to valuable existential reflection on the meaning of one's life and what one wants to devote one's life to.

The more transformative insights you have, the more you should weigh them against one another. Hidden within the obvious truths and great moments of enlightenment lies the potential to make the biggest mistakes.

So-called dialectical thinking often serves as a practical aid to critical thinking: one must sincerely weigh different sides against one another, internally debate the pros and cons, and consider many perspectives—only in this way can one avoid falling into black-and-white views.



Sometimes it can feel uncomfortable, and that is when we realize how emotionally demanding critical thinking can be.

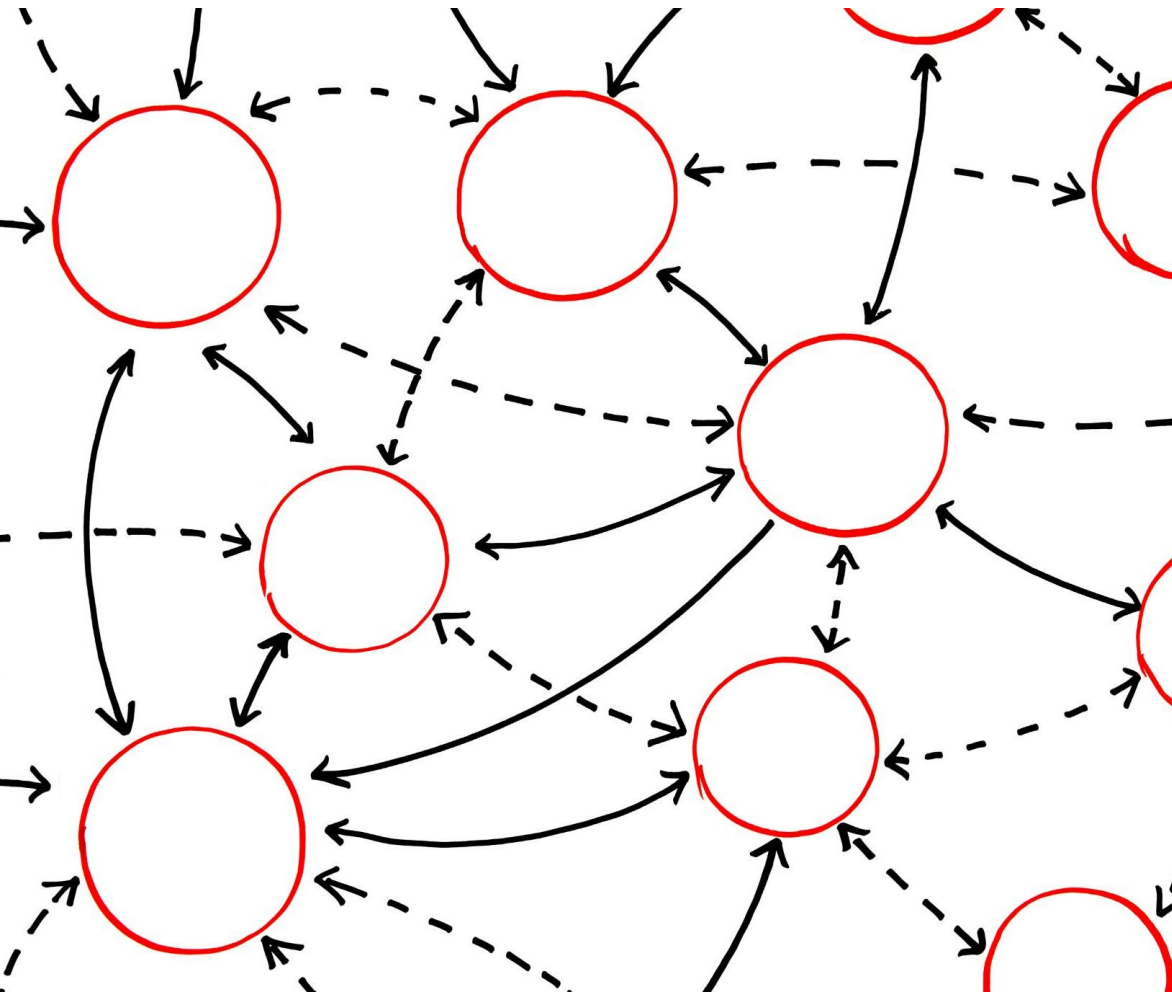
For example, thinking against one's own preconceived notions is difficult for everyone: what might be worth listening to in a perspective that we would spontaneously and strongly oppose? And, on the other hand, what might be the flaws or errors in the viewpoints we would defend?

Usually, this does not lead to a change in one's own opinion, but the value of this is that it gives us a deeper understanding and enables us to better justify our position.



Core Critical Thinking Tools

– a summary by AI



There is a set of structured tools that support analysis, evaluation, and reflection.

Claim–Evidence–Reasoning Framework

CER clarifies assertions by linking claims to evidence and reasoning, enhancing logical analysis.

Bloom’s Taxonomy

Bloom’s Taxonomy guides progression from basic recall to advanced analysis and synthesis skills.

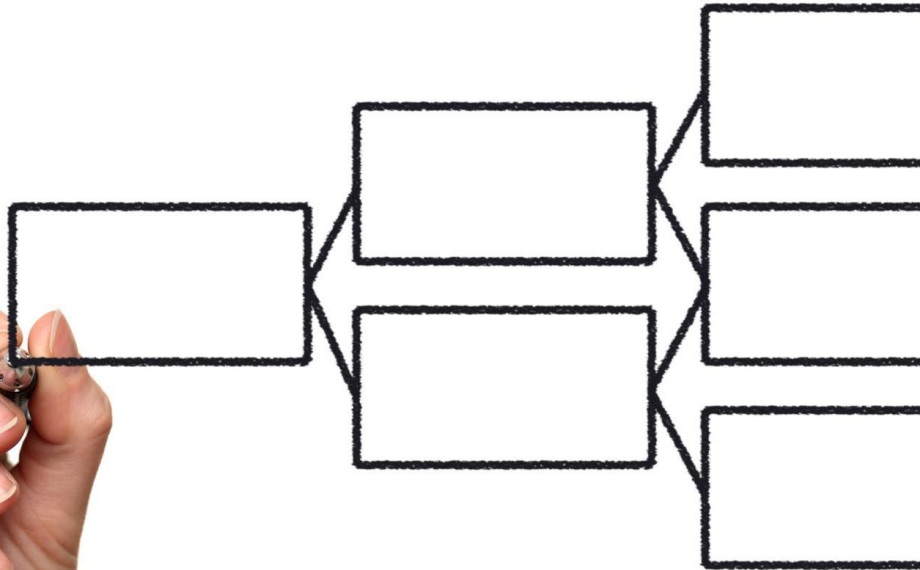
Argument Mapping

Argument mapping visually breaks down reasoning structures, making premises and conclusions clear.

Decision Trees and Reflective Tools

Decision trees clarify options and outcomes; reflective tools promote examining thought processes.

Argument Mapping and Reasoning Structure



Visualizing Argument Components

Argument mapping visually organizes claims, reasons, assumptions, and evidence to clarify reasoning structure.

Improving Logical Clarity

This method reduces ambiguity by making implicit assumptions explicit and distinguishing claims from conclusions.

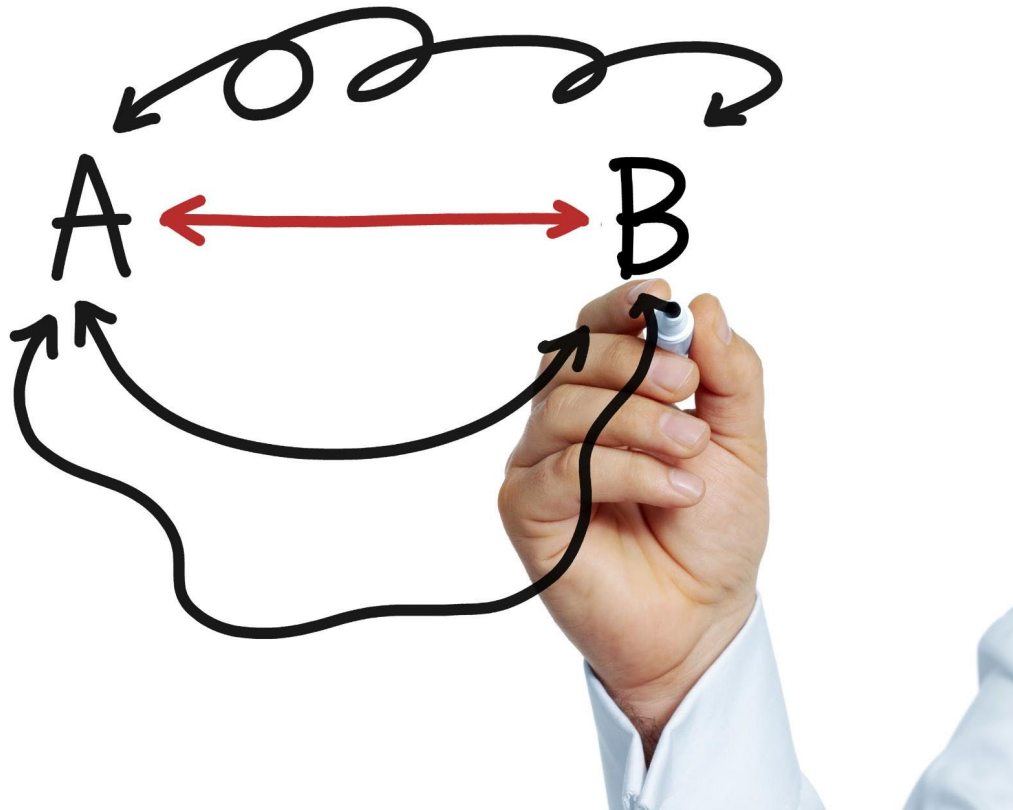
Applications and Benefits

Used in academics, policy, and problem-solving, argument mapping supports metacognition and systematic thinking.

Training to Counter Bias

Repeated use trains deliberate analysis and counters flawed intuitive judgments for better reasoning skills.

Decision Trees and Root-Cause Analysis



Structured Decision-Making

Decision trees map options, outcomes, and consequences to reduce impulsive choices and clarify trade-offs.

Root-Cause Analysis

Root-cause analysis uncovers underlying problems by focusing beyond superficial symptoms using methods like the Five Whys.

Enhanced Critical Thinking

Using these tools improves reasoning by promoting evidence-based justification and transparent decision processes.

Collaborative Decision Support

Decision tools facilitate group discussion by providing a shared framework for evaluation and reasoning.

This material was developed using mainly the following sources:

<https://www.oicbrighton.com/news/2025/09/08/separating-fact-from-fiction-the-importance-of-critical-thinking>

<https://journals.sagepub.com/doi/full/10.3102/0034654314551063>

https://link.springer.com/chapter/10.1007/978-3-030-45002-1_20

<https://www.frontiersin.org/journals/education/articles/10.3389/educ.2026.1689764/full#B55>

<https://artpro.uniarts.fi/sv/material/kritiskt-tankande/>

<https://asana.com/sv/resources/critical-thinking-skills>

<https://se.linkedin.com/pulse/critical-thinking-proven-sa-q9hif?tl=sv>

https://netn.fi/syn_publication/filosofisen-ajattelun-opas/

