

UNIFORS 2020

Universities for future work skills 2020

Module 3a Critical Thinking Teaching materials for soft skills blended course



UniversidadeVigo



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Project title: UNIFORS 2020

Grant Agreement number: 2018-1-PL01-KA203-050809

Publisher: UVIGO, Spain

Venue: 30/11/2021 Vigo, Spain

Editing: The partnership of the ERASMUS+ UNIFORS 2020 project:

- Uniwersytet Warmiński Mazurski w Olsztynie
- Universidad De Vigo
- Universitatea Romano Americana Asociatie
- Instituto Politecnico Do Porto
- Infalia Private Company
- Haute école de la province de Liège

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This project has been funded with support from the European Commission.

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Overall of the materials

1. Target groups: students, teachers and business
2. Educational outcomes:
 - Knowledge: asking appropriate questions, gathering and creatively sorting through relevant information, relating new information to existing knowledge, re-examining beliefs and assumptions, reasoning logically, and drawing reliable and trustworthy conclusions.
 - Skills: observation, analysis, interpretation, inference, communication, explanation, evaluation.
 - Competences: understand the links between ideas; recognize, build and appraise arguments; identify inconsistencies and errors in reasoning; approach problems in a consistent and systematic way; reflect on the justification of their own assumptions.

Useful literature

1. Paul, R., & Elder, L. (2020). *The Miniature Guide to Critical Thinking Concepts and Tools*. (8th ed.). London, UK: Rowman & Littlefield.
2. Browne, M.N., & Keeley, S.M. (2018). *Asking the right questions: A guide to critical thinking*. (12th ed.). New York, NY: Pearson.
3. Chatfield, T. (2017). *Critical Thinking: Your Guide to Effective Argument, Successful Analysis and Independent Study*. London, UK: Sage Publishing.
4. Abrami, P.C., Bernard, R.M., Borokhovski, E., Waddington, D.I., Wade, C.A., & Person, T. (2015). Strategies for Teaching Students to Think Critically: A Meta-analysis, *Review of Educational Research*, 85(2): 275–314.

By the end of this session,
you will be able to:

- Define and understand the concept of critical thinking
- Understand the differences between critical thinking and creative thinking
- Identify the critical thinking skills
- Understand the critical thinking process



What do *you* think critical thinking means?

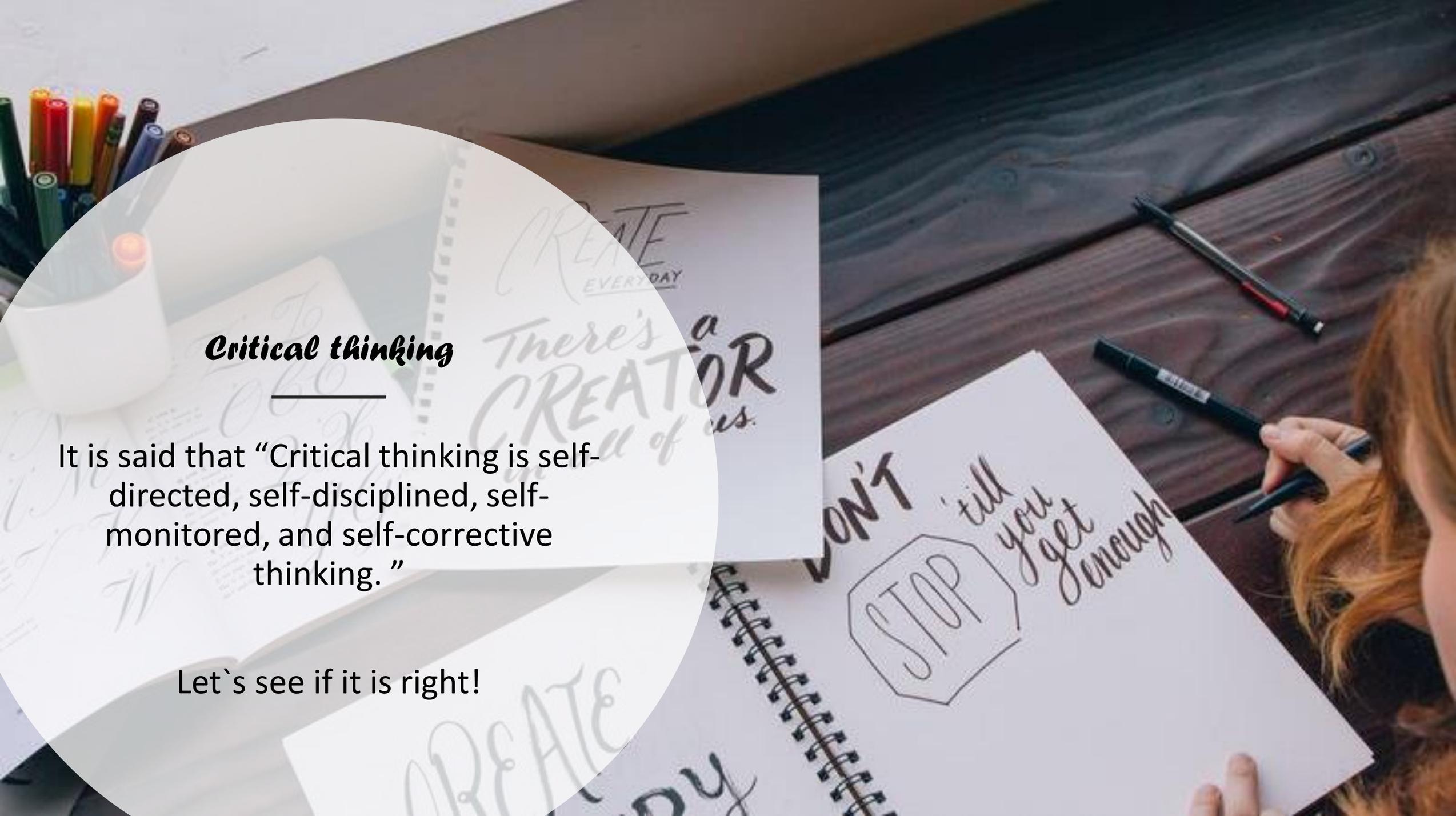
Are you a critical thinker?



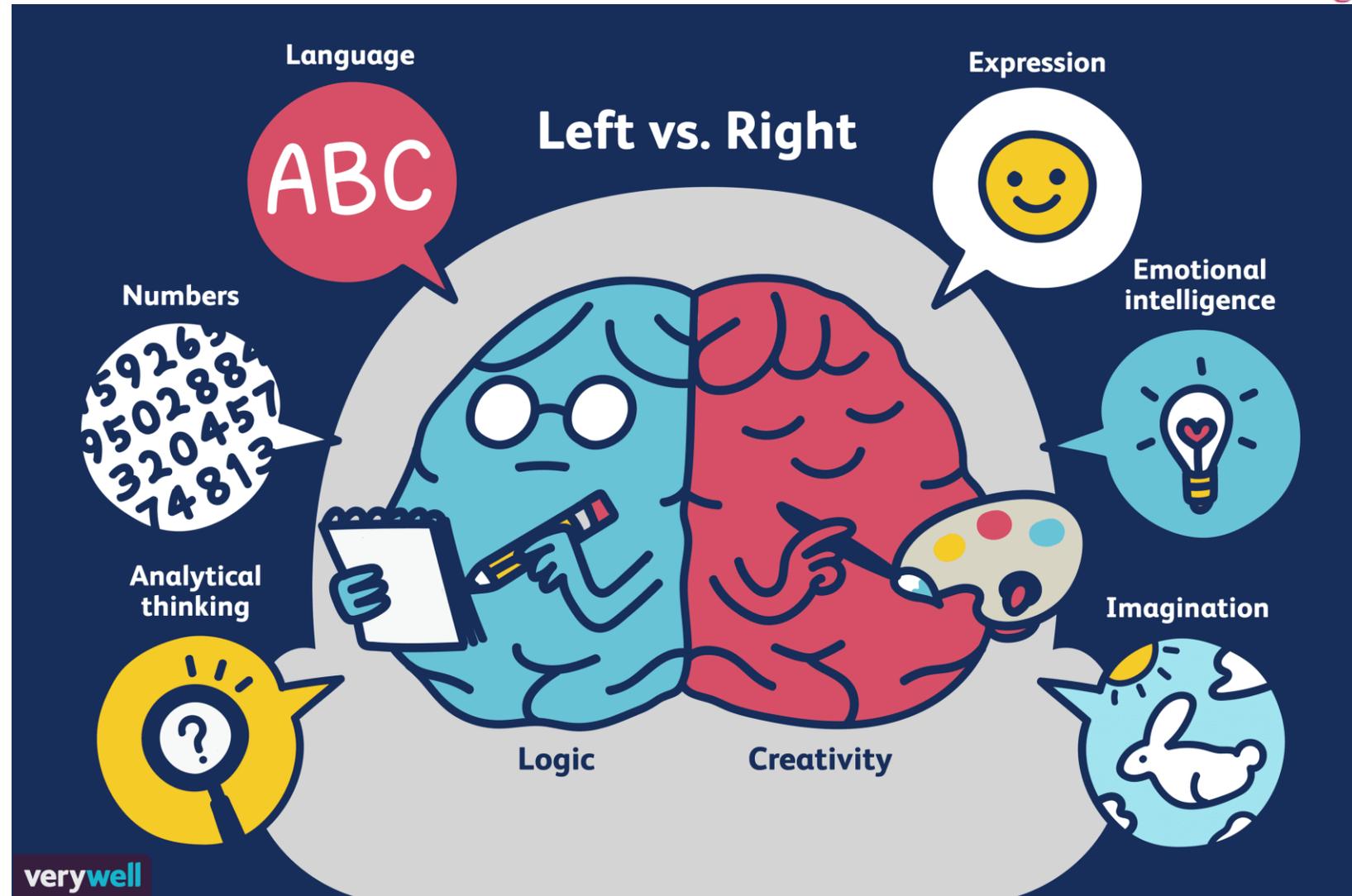
Critical thinking

It is said that “Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking.”

Let`s see if it is right!



Are you a left-brained or a right-brained?



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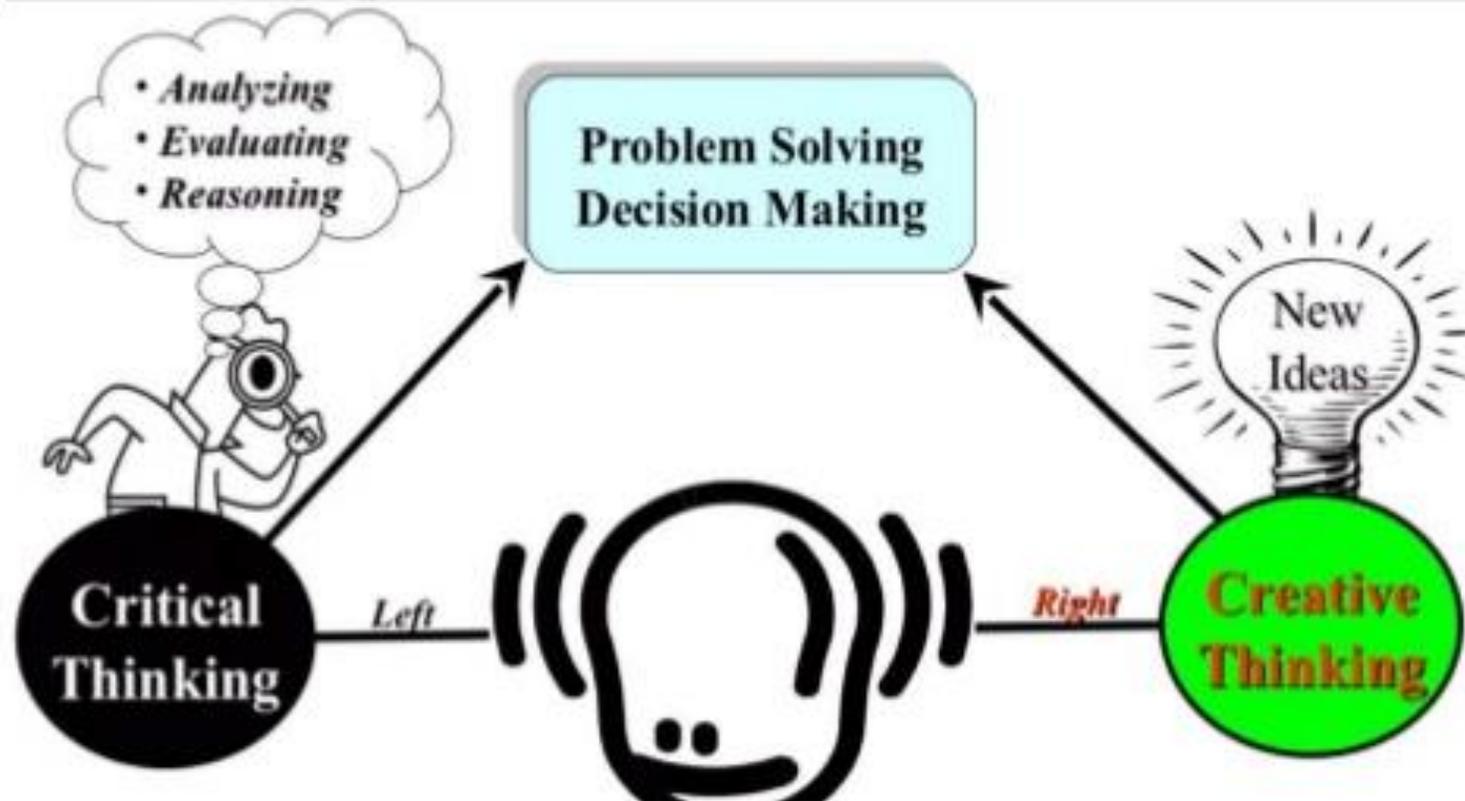
Let`s see!

<https://testyourself.psychtests.com/testid/3178>



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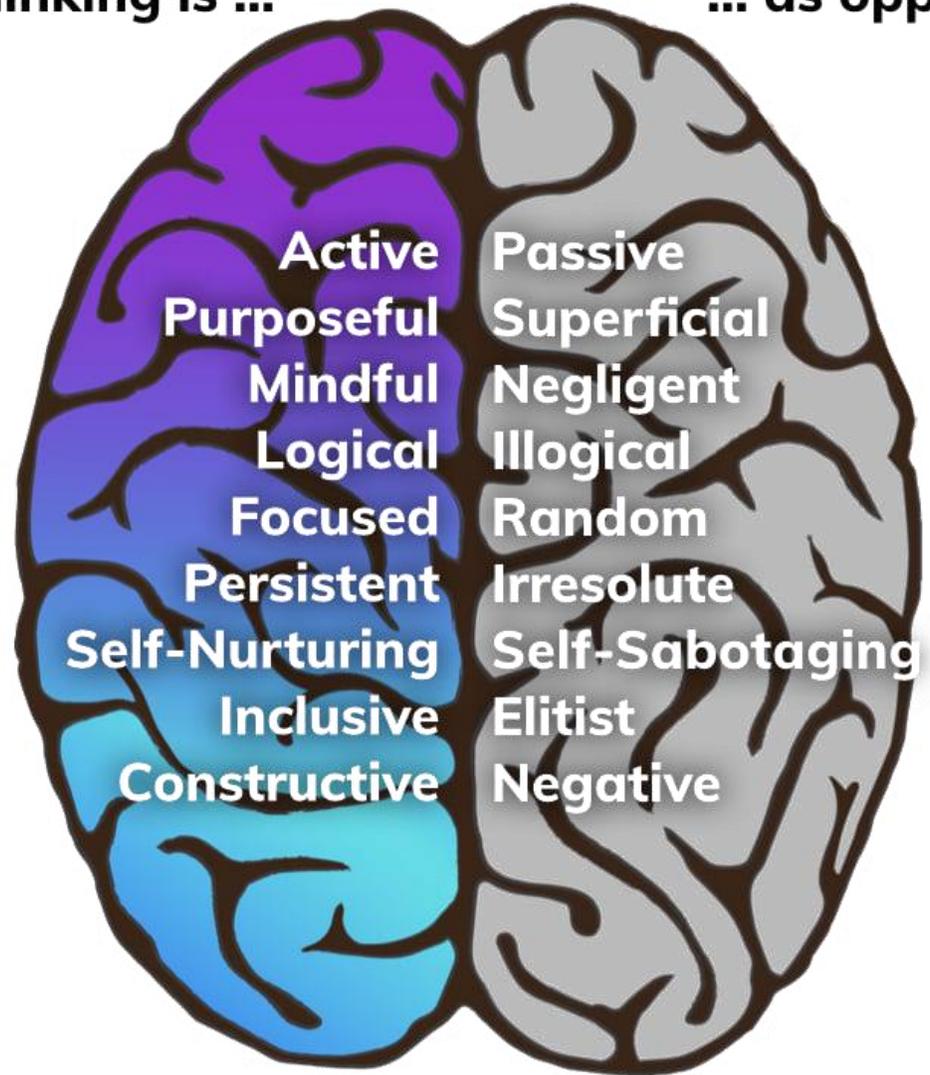
Types of Thinking?



By Janneth Obispo

Critical thinking is ...

... as opposed to ...



Critical thinking

- the ability to analyse information objectively and make a reasoned judgment
- involves the evaluation of sources such as data, facts, observable phenomenon, and research findings.

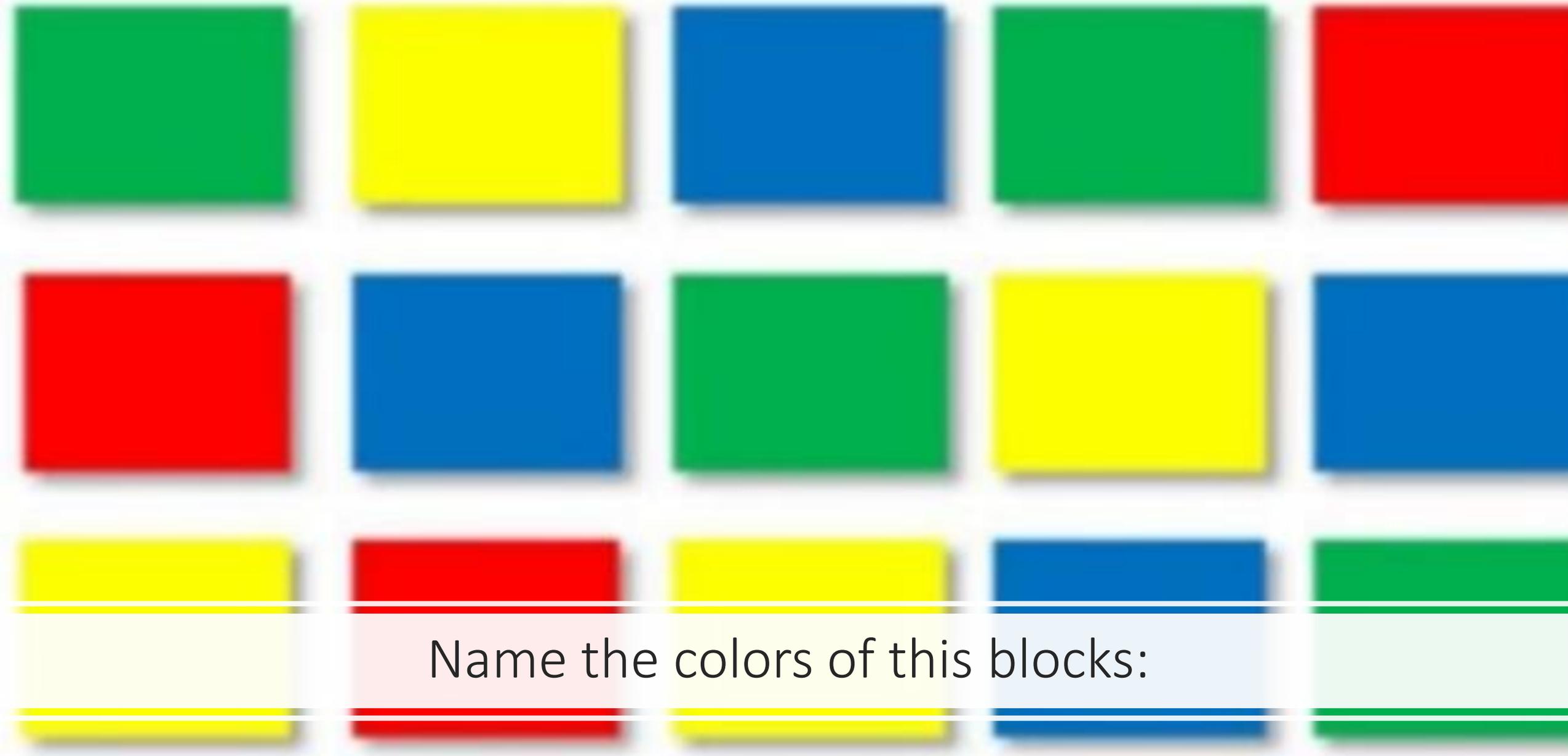
Creative thinking

- focuses on exploring ideas
- generates possibilities
- looks for more than one answer to a problem

Critical Thinking is:

A way of thinking about particular things at a particular time; it is not the accumulation of facts and knowledge or something that you can learn once and then use in that form forever, such as the nine times table you learn and use in school (*Skillsyouneed, 2019*).





Name the colors of this blocks:

Now say the colour of the word you can see... **FAST:**

GREEN



YELLOW

Here are some collected definitions from around the Web that discuss the meaning of critical thinking:

“Critical thinking is the intellectually disciplined process of actively and skilfully conceptualizing, applying, analysing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.” —*The Foundation for Critical Thinking*

“Critical thinking is a widely accepted educational goal. Its definition is contested, but the competing definitions can be understood as differing conceptions of the same basic concept: careful thinking directed to a goal.” —*Stanford Encyclopedia of Philosophy*

“Critical thinking is thinking about your thinking while you’re thinking in order to make your thinking better.” —
Richard W. Paul

“Thoughtful people ponder the meaning of what they learn and the consequences of what they do. They bring assumptions and implications of ideas and actions to the surface, and challenge them if needed.” —*Grant Wiggins*



Here are some examples of Critical Thinking (*Doyle A., 2019*)

The circumstances that demand critical thinking vary from industry to industry. Some examples include:

- A triage nurse analyses the cases at hand and decides the order by which the patients should be treated.
- A plumber evaluates the materials that would best suit a particular job.
- An attorney reviews evidence and devises a strategy to win a case or to decide whether to settle out of court.
- A manager analyses customer feedback forms and uses this information to develop a customer service training session for employees.

Critical thinking skills

Why?

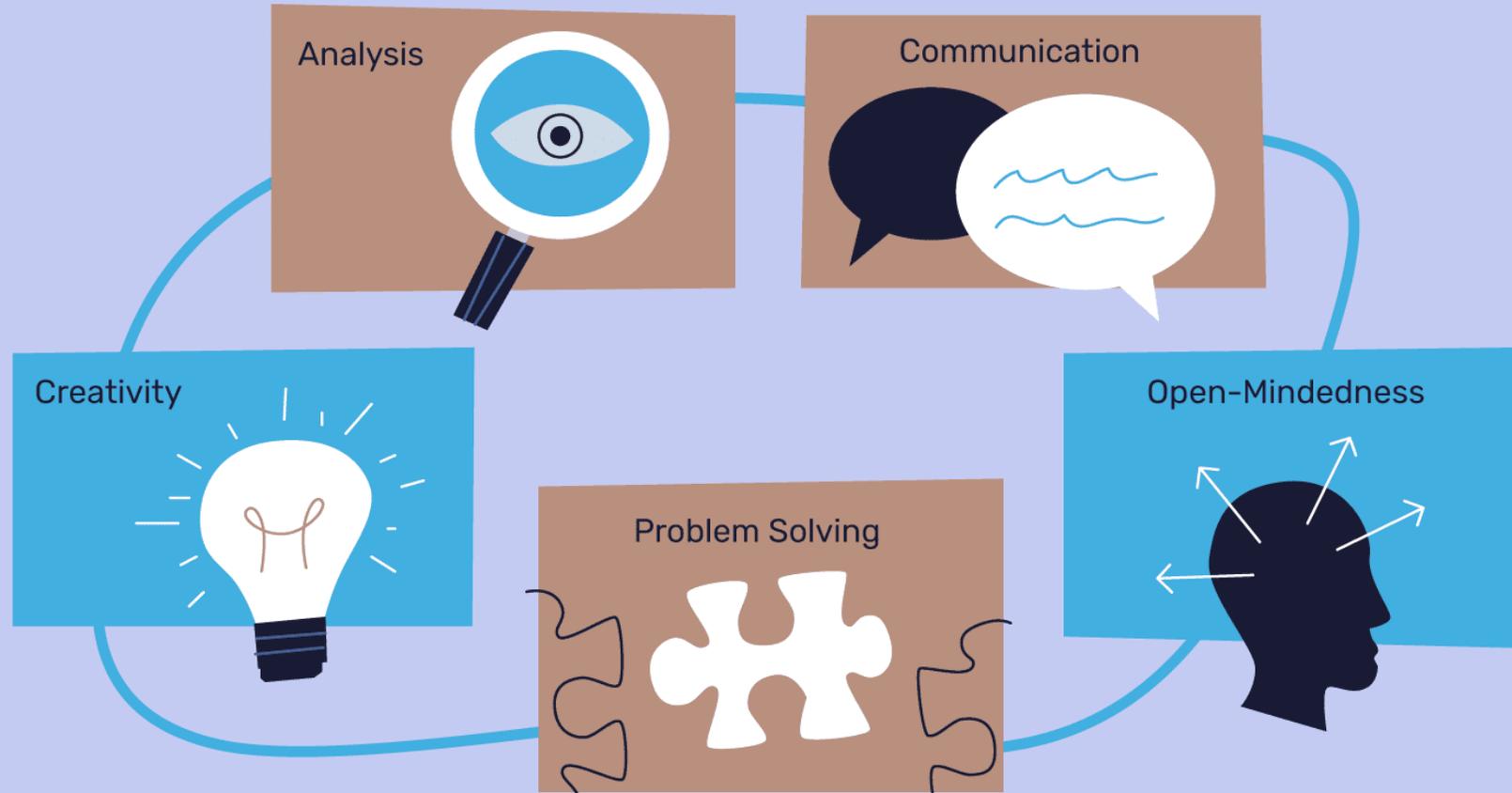
Benefits of Critical thinking skills (Cottrell S., 2011):

- improved attention and observation;*
- more focused reading;*
- improved ability to identify the key points in a text rather than becoming distracted by less important materials;*
- knowledge on how to get your own point across more easily;*
- skills of analysis that you can choose to apply in a variety of situations.*



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Critical Thinking Skills



 the balance

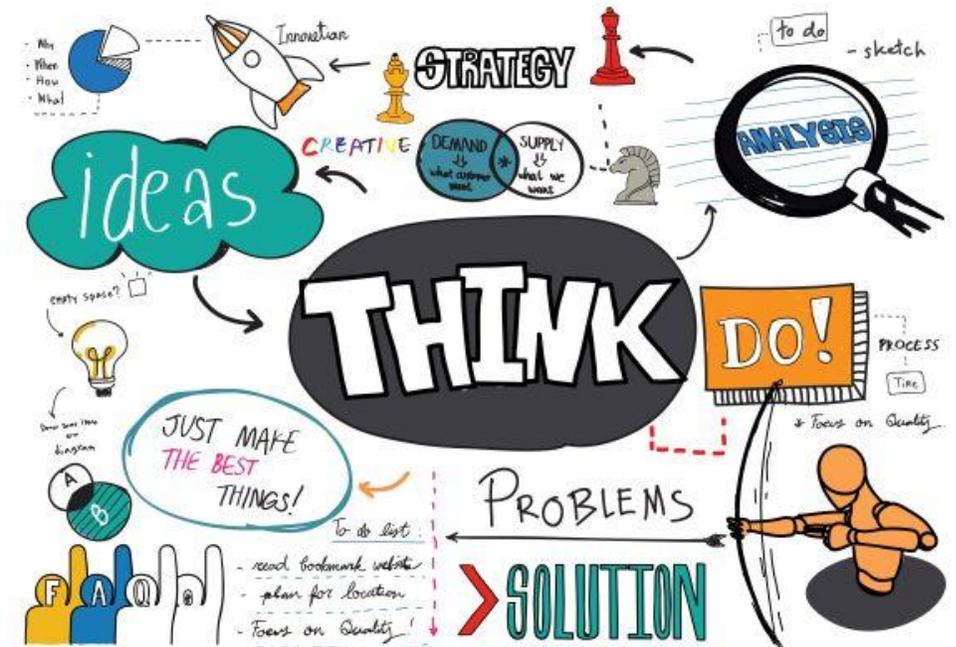
(Doyle A., 2019)



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1. Analytical

The ability to carefully examine something, whether it is a problem, a set of data, or a text is a part of critical thinking. People with analytical skills can examine information, and then understand what it means, and what it represents.



What must be done:

- Asking thoughtful questions
- Data analysis
- Information seeking
- Interpretation
- Judgment
- Questioning evidence
- Recognizing differences and similarities
- Scepticism



“Most executives, many scientists, and almost all business school graduates believe that if you analyse data, this will give you new ideas. Unfortunately, this belief is totally wrong. The mind can only see what it is prepared to see.”

Edward de Bono

What should be done:

- Asking important questions
- Assessment, Collaboration, Explanation
- Expressing opinions and ideas
- Interpersonal
- Presentation
- Teamwork
- Verbal and written communication

3. Creativity

Critical thinking involves some level of creativity. You might need to spot patterns in the information you are looking at or come up with a solution that no one else has thought of before. All of this involves a creative eye.

- Cognitive flexibility
- Conceptualization
- Curiosity, Imagination
- Making abstract connections
- Making inferences
- Predicting, Synthesizing, Visionary



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4. Open-Minded

To think critically, you need to be able to put aside any assumptions or judgments and merely analyse the information you receive.

You need to be objective, evaluating ideas without bias.



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What should be done:

- Embracing different cultural perspectives
- Fair
- Humble
- Inclusive
- Objective
- Observation
- Reflection



5. Problem Solving

Another crucial critical thinking skill that involves analysing a problem, generating and implementing a solution, and assessing the success of the plan. In the end, employers don't simply want employees who can think about information critically; they also need to be able to come up with practical solutions.

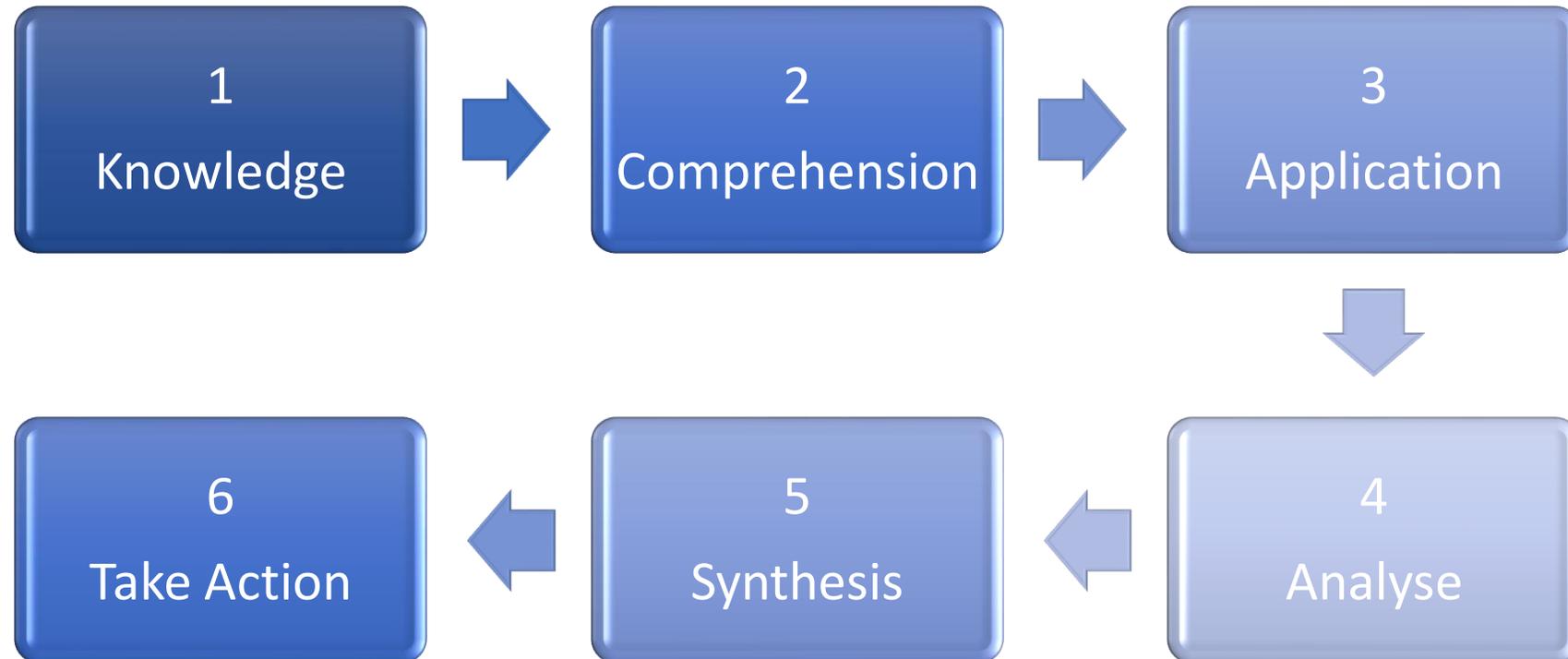




- Applying standards
- Attention to detail
- Clarification
- Collaboration
- Decision making
- Evaluation
- Grounded
- Identifying patterns
- Innovative
- Logical reasoning



The Critical Thinking Process

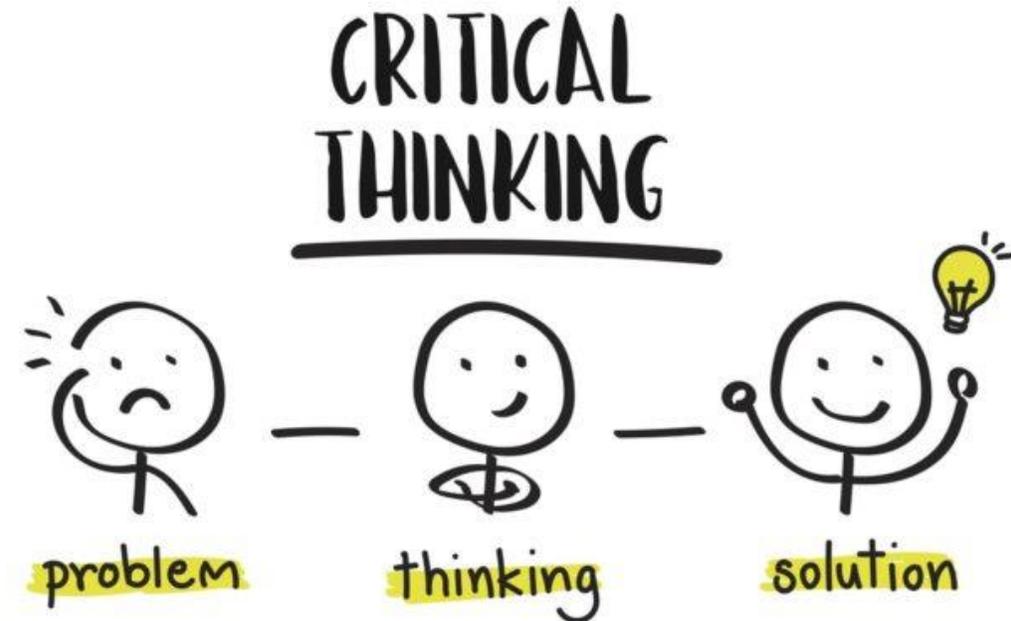


Step 1: Knowledge

This step identifies the argument or the problem that needs to be solved.

Two important questions

What is the problem? And why do we need to solve it?



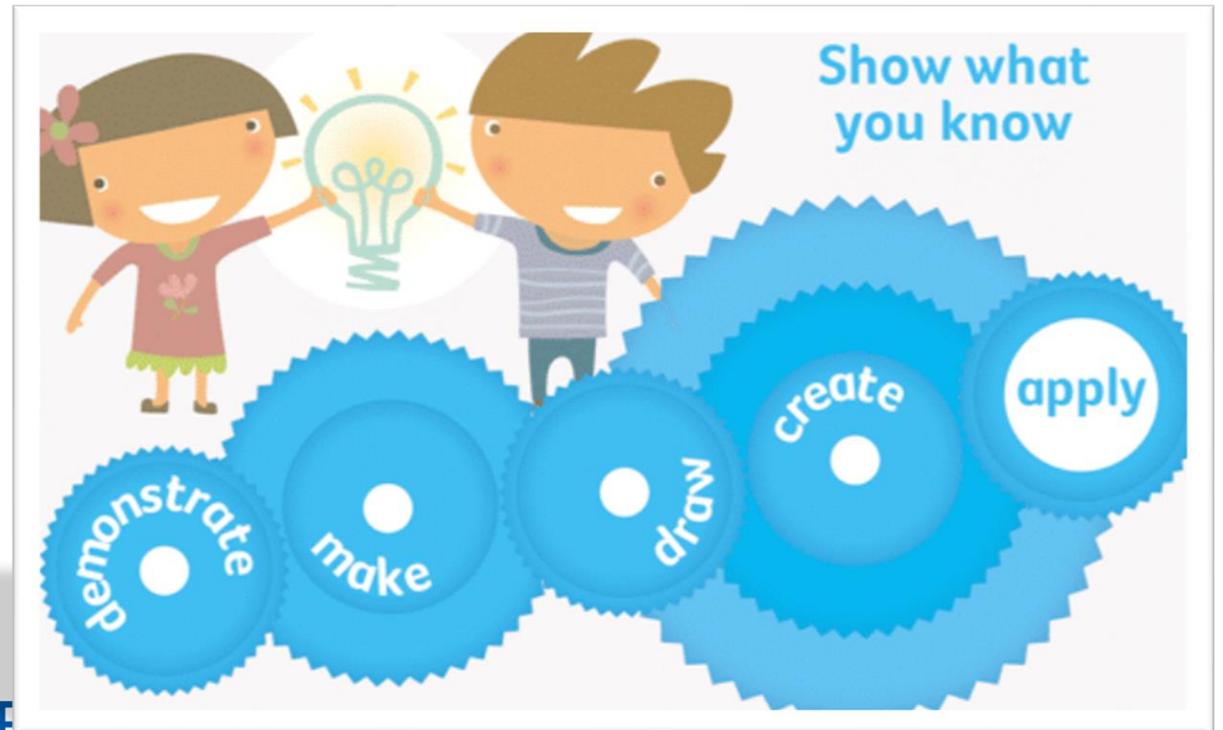
Step 2: Comprehension



Once the problem is identified, the next step is to understand the situation and the facts aligned with it. The data is collected about the problem using any of the research methods that can be adopted depending on the problem, the type of the data available, and the deadline required to solve it (Elmansy R., 2016).

Step 3: Application

This step helps to complete the understanding of different facts and resources required to solve the problem by building a linkage between the information and resources. In order to analyse the situation can use mind maps, to build a relation between it and the core problem, and determine the best way to move forward.



Step 4: Analyse

Once the information is collected and linkages are built between the main problems, the situation is analysed in order to identify the situation, the strong points, the weak points, and the challenges faced while solving the problem.

The priorities will be set for the main causes and determine how they can be addressed in the solution. Now it is the time for a cause-effect diagram, which divides the problem from its causes and aims to identify the different causes and categorize them based on their type and impact on the problem.

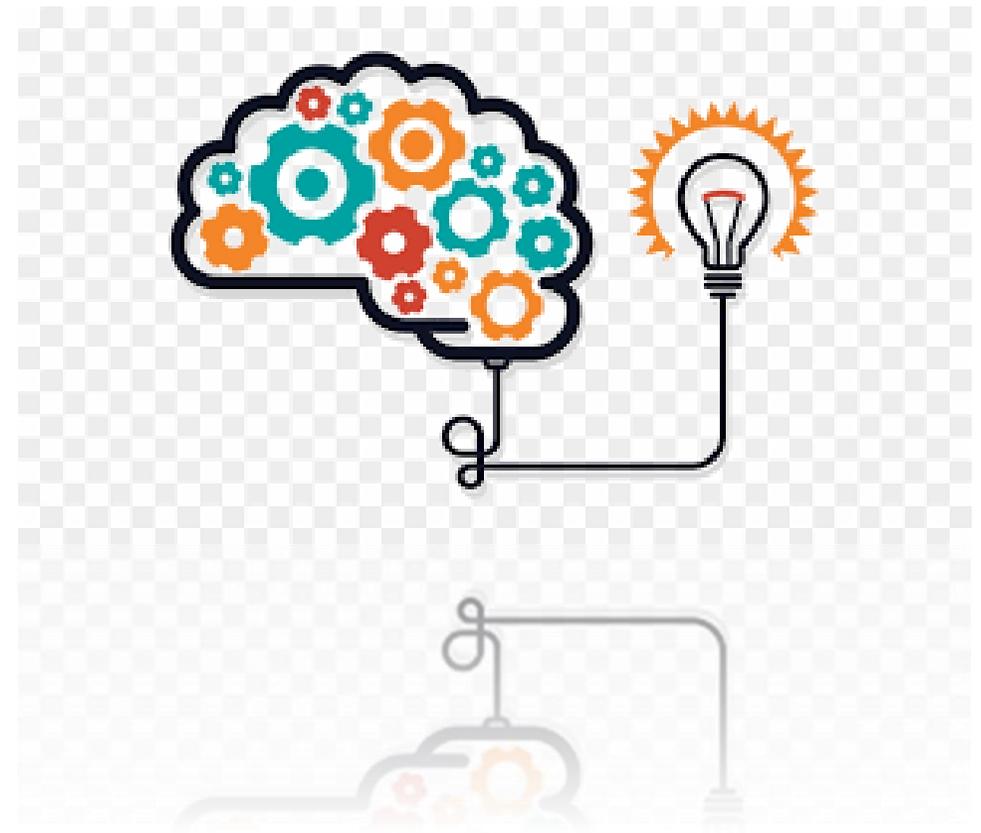
Step 5: Synthesis

When the problem is fully analysed and all the related information is considered, a decision should be formed about how to solve the problem and the initial routes to follow to take this decision into action.

If there are multiple solutions, they should be evaluated and prioritized in order to find the most advantageous solution. The best tool that can help choosing the best problem solution is the SWOT analysis that tends to identify the solution's strength, weakness, opportunity, and threats (Elmansy R., 2016).

Step 6: Take Action

Finally it is necessary to build an evaluation about the problem that can be put into action. The result of critical thinking should be transferred into action steps. If the decision involves a specific project or team, a plan of action could be implemented to ensure that the solution is adopted and executed as planned.



Improving your critical thinking

- Seek out ideas—old and new
 - Read books, periodicals, articles, etc.
 - Experiment, brainstorm, have discussions, attend exhibits
- Take action
 - Dare to be different!
- Be open minded and flexible
- Apply ideas to every facet of your life
 - *Always* ask, “How can this be done better?”

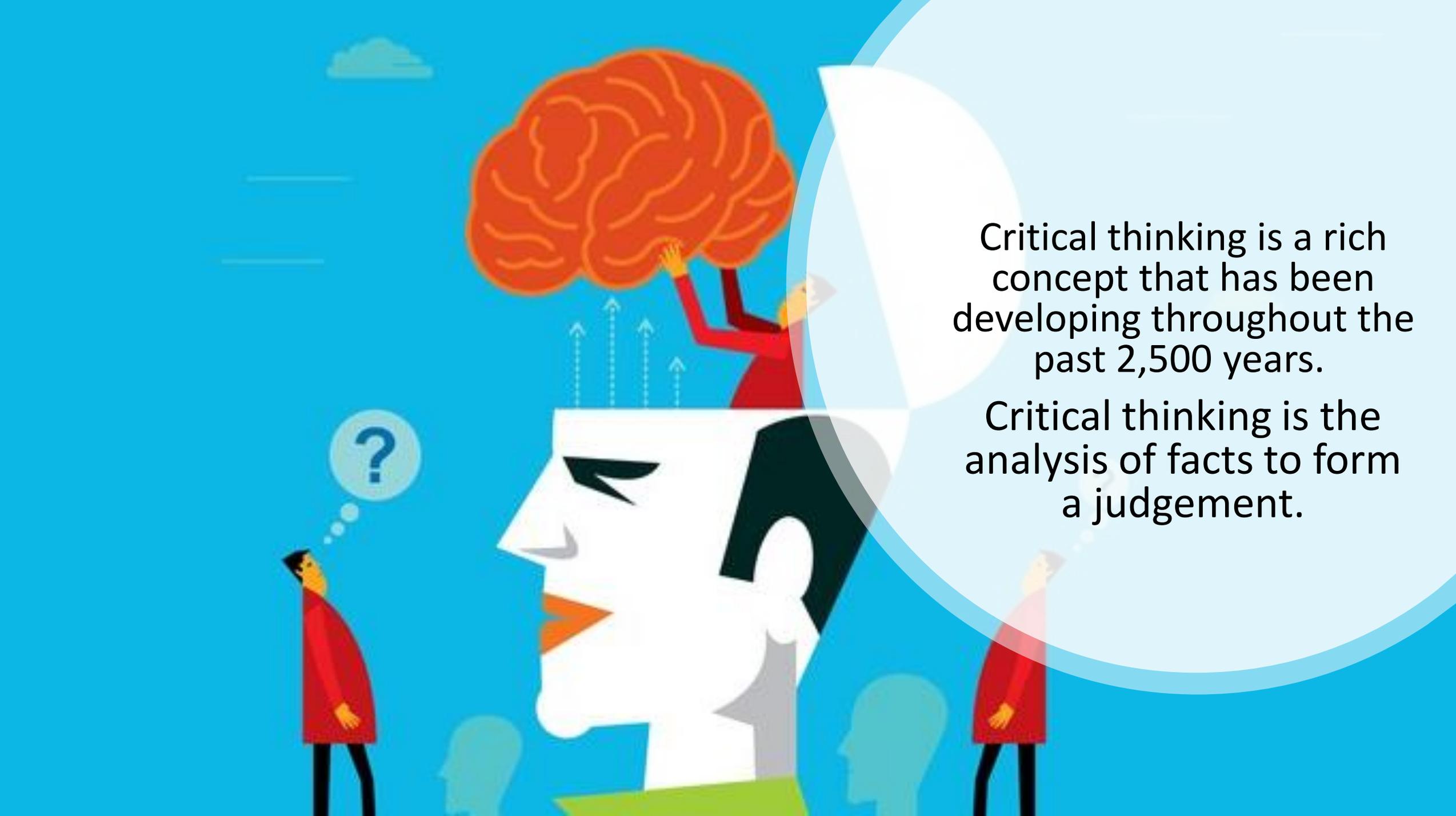


- Study innovation, change, and creativity
- Be curious and observant
 - Look at situation through the eyes of a child
 - Keep asking, “*why*”
- Ask good questions
 - Constantly reflect on each aspect
 - Who, what, where, when, why, how, if, etc.

- Develop your reflective thinking skills
 - Daydream about the situation
 - Jump between logical, imaginative, and wild thinking
- Build your knowledge and intuition base
 - Learn how to research and visualize
- Use triggers
 - Find the time and place that help you think better



CONCLUSIONS



Critical thinking is a rich concept that has been developing throughout the past 2,500 years.

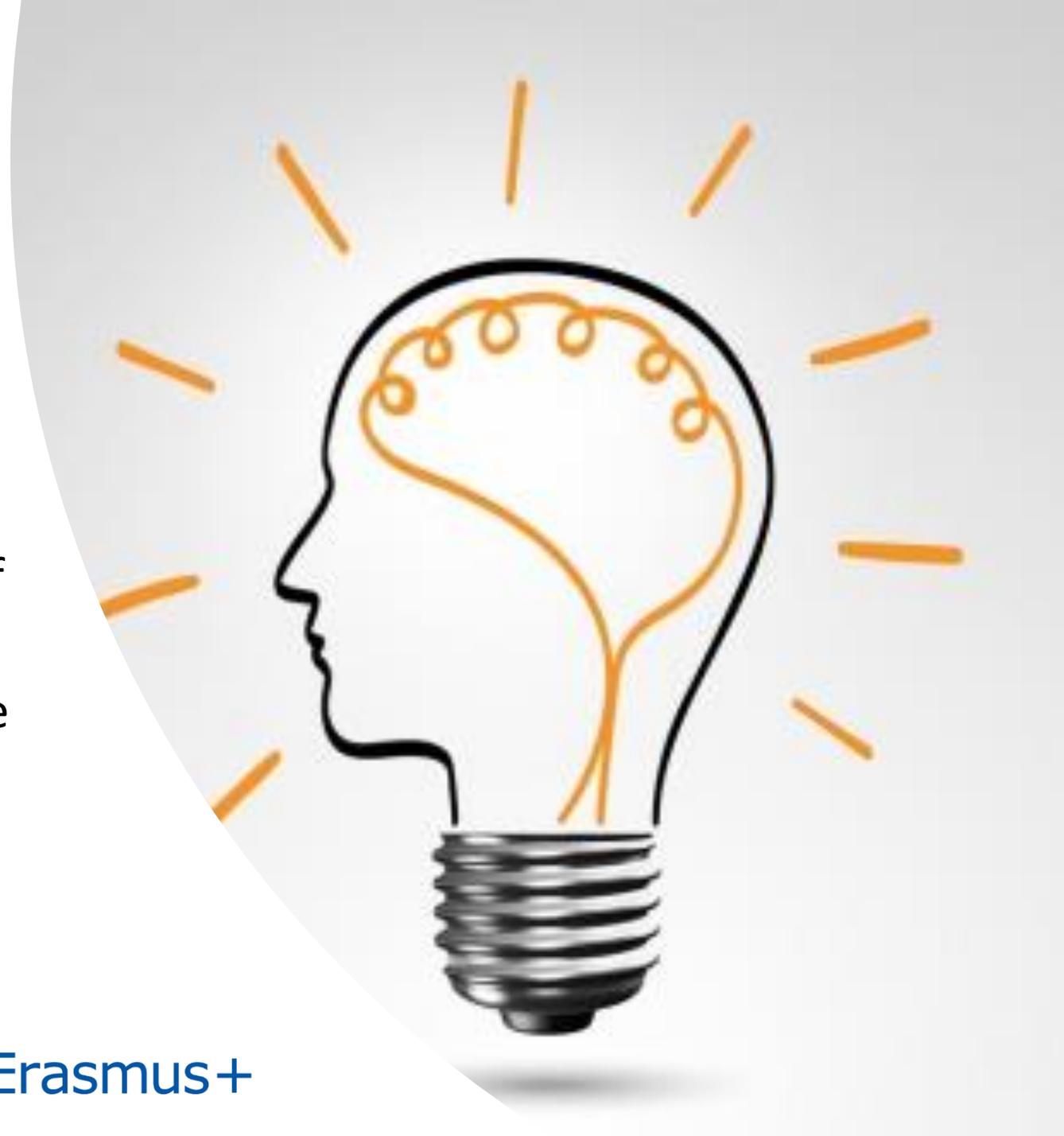
Critical thinking is the analysis of facts to form a judgement.

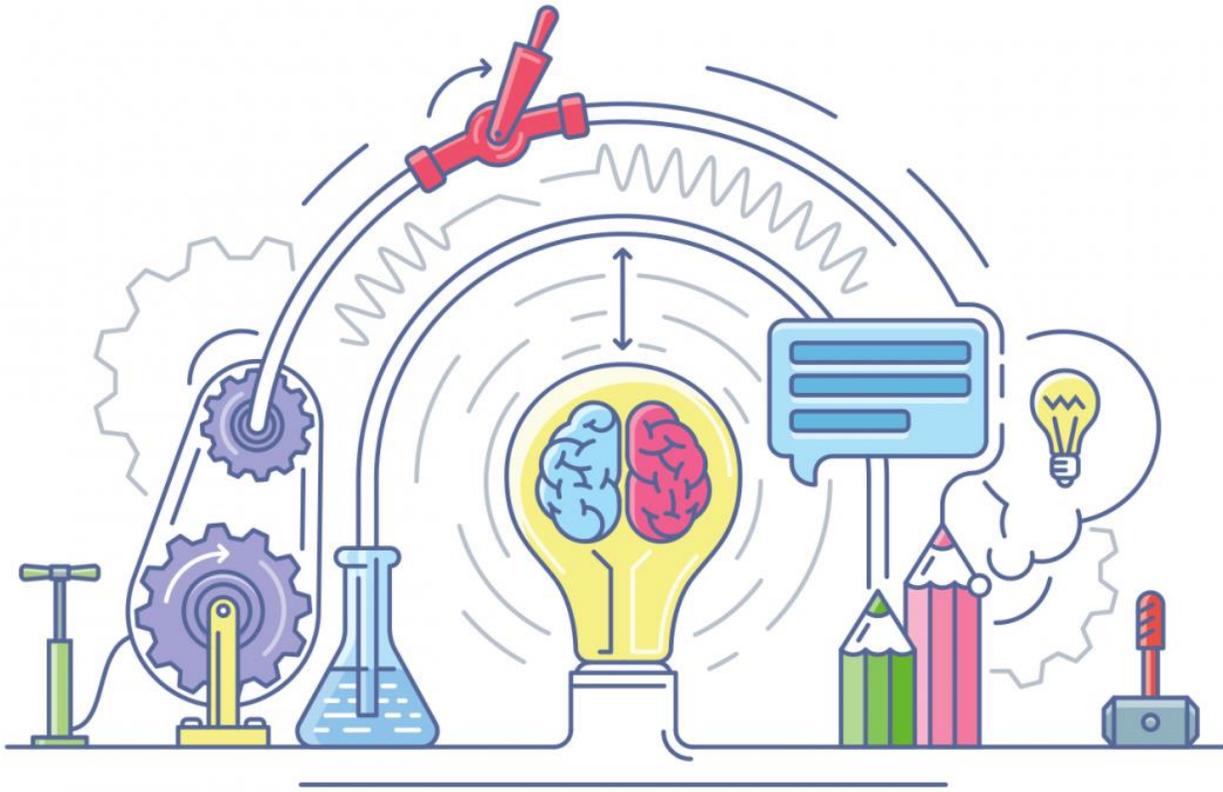
It is known that Critical thinking is self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way.

People who think critically attempt to live rationally, reasonably, empathically and they will be able to understand logical connections between ideas.



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Critical thinking teaches us how to differentiate emotion and reasons and no matter how logical we are, when come to facing problems, we do have emotions and argues on accepting ideas and solutions. Also, critical thinking helps us to separate the two, and as a result, we will not be easily interfered.

Resources:

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