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Trainer's Manual

Critical Thinking Lab

Help prevent radicalisation by learning how to equip youths with critical thinking skills

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Executive Summary

The most fundamental definition of thinking is very simple and intuitive: all humans think. But critical thinking begins when we start thinking about our thinking with a view toward improving it (Paul & Elder, 2014, p. 6).

Critical thinking can be analysed as having two components: (1) a set of information and belief generating and processing skills, and (2) the habit, based on intellectual commitment, of using those skills to guide behaviour. It is thus to be contrasted with: (1) the mere acquisition and retention of information alone, because it involves a particular way in which information is sought and treated; (2) the mere possession of a set of skills, because it involves the continual use of them; and (3) the mere use of those skills ("as an exercise") without acceptance of their results.

This manual was designed as a tool to be used in the experimental lab dedicated to developing critical thinking skills for children and youth in vulnerable environments, in order to develop their capacity of self-guided, self-disciplined thinking which attempts to reason in a fair-minded way.

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Experimental Lab 'Critical Thinking'

Why teaching critical thinking?

By being taught how to think critically, we learn how to pursue "truth" over our own biases, persist through challenges, assess our own thinking fairly, and abandon mistaken reasoning for new and more valid ways of thinking.

Why is critical thinking important when addressing societal polarisation caused by the adoption and spread of extremist ideologies? Because it empowers young people to think independently, to make sense of the world based on personal experience and observation, and to make critical well-informed decisions in this way. As such, they gain confidence and the ability to learn from mistakes as they build successful and productive lives.

Manual rationale

This manual is aimed to provide the curricula and actual content of the experimental lab dedicated to critical thinking techniques in the form of innovative games, exercises and techniques to be adopted in working with children and youth in vulnerable environments, in order to develop their critical thinking capacity.

Thinking or reasoning involves objectively connecting present beliefs with evidence determining an individual to form new beliefs and opinions. By comparison, critical thinking is a deliberate meta-cognitive (thinking about thinking) and cognitive (thinking) act whereby a person reflects on the quality of the reasoning process simultaneously while reasoning to a conclusion. The thinker has two equally important goals: coming to a solution and improving the way she or he reasons (Moore, 2007, p. 2).

The curricula and content of the lab should be used in direct correlation with the support material provided in the present document.

Key competences to be developed

- Becoming aware of the inherently flawed nature of human thinking when left unchecked and thus diminishing the power of human egocentric and socio-centric tendencies.
- Improving participants' reasoning abilities and their awareness about the situations when they become victims of mistakes in reasoning, human irrationality, prejudices, biases, distortions, uncritically accepted social rules and taboos, self-interest, and vested interest.
- Avoiding thinking simplistically about complex issues and striving to appropriately consider the rights and needs of others.

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Methodology

This experimental lab is based on developing knowledge and skills though the cognitive-behavioural instructional model and the learning by doing model. Its main aim is to provide trainees with an essential set of skills and behaviours easily **usable and adaptable when dealing with young individuals.** Participants will also be encouraged to learn and replicate these techniques whenever adequate within communities.

The lab is designed to be used as a safe chamber where participants can learn and experiment alternative ways of responding to contexts where stereotyped and unreasonable thinking is displayed or experienced by young individuals in connection to social isolation, polarisation and extremism. **Participants will also be encouraged to learn and replicate these techniques whenever adequate within communities.**

The lab proposes techniques that help teach young individuals respond to anger stimuli in concrete situations. It equips professionals involved in interaction with young people with solutions to encourage them how to control the episodes of undisciplined or irrational thought, raise the quality and depth of experience and identify own blind spots and tendencies towards self-delusion.

Educational techniques	
Instruction	X
Demonstration	X
Role play	X
Rehearsal in pretend scenarios	X
Feedback	X
Reinforcement	
Extended practice	
Guided discussions	X
Cognitive modelling through mentor think aloud	
Free discussions	X
Covert self-instruction (student inner speech)	

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Experimental Lab Scenario

Theme

Critical thinking – understand, learn how to use, integrate into everyday professional interaction with individuals vulnerable to radicalisation and violence those strategies and techniques that can empower young people avoid thinking simplistically about complicated issues and strive to appropriately consider the rights and needs of relevant others.

Target audience

First line professionals working with youth vulnerable to radicalisation – teachers, school councillors, social workers, police and security officers.

Core questions to be answered

- What is critical thinking?
- Can we enhance our ability to think on sensitive issues that usually lead to conflict?
- How can we address questions to de-conflict and better understand the reasons that lay behind mental shortcuts, presuppositions and deeply routinized mental models?
- What is the relationship between thinking and thinking about the way we think?
- What are the best strategies to identify stereotyped patterns of thinking and acting in your personal life?
- What are the best strategies to counter simplistic and biased thinking of vulnerable teenagers?
- How much can a teacher or a social worker help and where do we need to address professional help (e.g. individual therapy, group therapy)?

Core concepts to be addressed

Critical thinking, stereotyped thinking, questions, biases, thinking outside the box, independent thinking.

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Key learnings

- Recognise the signs of simplistic and simplifying thinking in themselves and others
- Identify the psychological fundamentals of thinking, how it affects the attitudes and behaviours of the individual, how it can be enhanced towards self-directed, self-disciplined, self-monitored, and self-corrective thinking expressions
- Understand how they can offer support in the short term and advice troubled individuals on the psychological support they might need in the long run
- Develop social responsibility and social skills to address individuals with stereotyped thinking
- Reflect on how strategies and tactics used in addressing biased thinking can be integrated and adapted to their professional routine

Exercises

Types of exercises to be developed:

- Try one sentence
- Role playing in a conflict situation
- Critical thinking through solution fluency
- A checklist for reasoning
- Spinner
- The 6 questions exercise
- Guided discussion
- Six steps in critical thinking

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#1 Try one sentence

Exercise No. 1	Try one sentence [1]
Objective	Understanding the impact of different perspectives on the same topic
Target audience	Age groups - teenage/adult
Timing	30 minutes
Input	White paper, pens, markers
Description	The trainer form groups of 8-10 participants. Next, the trainer asks the first participant from each group to write on a piece of paper one sentence describing a pre-defined topic (i.e. defining tolerance, hate, bullying etc.). After the first participant writes the sentence, he passes the paper to the second one who adds her/his sentence that illustrates the understanding of the topic also in a single sentence. After writing, the participant folds the paper down to cover the sentence received. Now only their sentence can be visible, so each time they pass the paper, the next participant can read only the last sentence. The goal is for participants to understand how each participant ads his/her own vision on the topic and how their perspectives vary. Additionally, they learn to apply their knowledge and logic to explaining themselves as clearly as possible. At the end, the trainer collects the paper and presents to the group the definitions, explaining the importance of having different perspectives when addressing a problem. **TIPS:** At the end of the exercise, it is important to note that analysing a problem from different perspectives is helpful in finding the best way to solve it and reducing uncertainty[2].

[1] Adapted from (Watanabe-Crockett, 12 Solid Strategies For Teaching Critical Thinking Skills, 2019)

[2] Subject developed by Richards. J. Heuer, Psychology of intelligence analysis, Center for the study of intelligence, CIA, 1999, Figure 3

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	Also, by acknowledging the fact that humans have different perspectives, the trainer reinforce the notion of tolerance and acceptance of diversity. "One of the many ways in which our mind attempts to make life easier is to solve the first impression of the problem that it encounters. Like our first impressions of people, our initial perspective on problems and situations are apt to be narrow and superficial. We see no more than we've been conditioned to see — and stereotyped notions block clear vision and crowd out imagination. This happens without any alarms sounding, so we never realize it is occurring"[3].
Learning method	Learning by doing demonstration and guided discussion
Visual support	-

It is difficult to look at the same information from different perspectives.

Figure 1. Perspectives

[3] Creative thinking, http://creativethinking.net/different-perspective/#sthash.ZFpbQ5wz.dpbs

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2 Role playing in a conflict situation

Exercise No. 2	Role playing in a conflict situation [4]
Objective	Developing critical thinking skills via role-playing, construct arguments and debate
Target audience	Age groups - teenage/adult
Timing	60 minutes
Input	internet access for research
Description	The starting premise is that role-playing is a good method for exercising critical thinking and becoming someone else calls upon stretching both one's analytical and creative mind. The trainer pairs students up and ask them to do research about a possible conflict involving an interaction between two persons (i.e. civil-rights professor vs. student with Islamic orientations, parent – children, teacher – student, policemen – delinquent teenager, prosecutor – defence lawyer etc.). Then the trainer asks them to decide which character they each choose to play. The participants will adopt different points of view in this conflict, related to the character chosen to play. The scope of the exercise is to let them discuss the subject until they can mutually explain the other's point of view. In the end, the final challenge for each participant will be to suggest a compromise and solve the potential conflict.
Learning method	Role play
Visual support	-

[4] Adapted from from (Watanabe-Crockett, 12 Solid Strategies For Teaching Critical Thinking Skills, 2019)

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3 Critical thinking through solution fluency

Exercise No. 3	Critical thinking through solution fluency [5]
Objective	Developing the critical thinking skills following a predefined guideline for addressing the problem and constructing arguments
Target audience	Age groups - teenage/adult
Timing	90 minutes
Input	Access to internet for research and documentation, white papers, flipchart, and markers
Description	The trainer divide participants into groups of 8-10 persons and ask them to work together to create an *European strategy for combating the drug consumption among young people* by using *the Solution Fluency process* which is defined by the 6 Ds - Define, Discover, Dream, Design, Deliver, and Debrief: **DEFINE:** Participantsmust decide exactly what needs to be solved and give proper context to the problem. **DISCOVER:** Includes researching, gathering, and analysing information about the problem. **DREAM:** Here we open the heart and mind to the possibilities of a solution the way we want it. **DESIGN:** This is the workshopping phase. Here the actual mechanics of your solution begin to take shape. **DELIVER:** This involves the action for completing the product (produce) and presenting the proposed solution (publish). **DEBRIEF:** The reflection stage is where participants look at the ways they succeeded, and ways they can use to improve their approach in future situations.

[5] Adapted from (Watanabe-Crockett, The One Critical Thinking and Problem Solving Process Everyone Needs, 2019)

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	For each stage, the trainer provides and discuss the following **guiding questions:** **DEFINE:** What are the details of the challenge we face? What do we want to overcome specifically? What do we want to solve? **DISCOVER:** What do I need to know and what do I need to be able to do? Why do we need this to happen? Why hasn't it been done previously? If it has, why wasn't it successful? What can we change? **DREAM:** What do we truly want to create? How will it function? What will it look like? What's our best-case scenario for the end goal? **DESIGN:** What does it look like "on paper"? How will we create and implement it? What are the steps we must take? What are the milestones and guidelines we will set for ourselves? How will we ensure everything is being done right and on time? How will we deal with problems? **DELIVER:** How do we bring this idea into functional reality? How do we practically apply what we've done? How will we present this to people? How will we know it's working? **DEBRIEF:** What were the results of our efforts? How did we succeed or fall short of accomplishing our goal? What went well, and what didn't? How can we improve our efforts and outcome in the future? How can we apply what we've done to similar problems? At the end of the process, each team must present the final product and the trainer ask other participants to evaluate and compare the results.
Learning method	Brainstorm, guided discussion, feedback
Visual support	-

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4 A checklist for reasoning

Exercise No. 4	A checklist for reasoning [6]
Objective	Developing the critical thinking skills following a predefined guideline for addressing the problem and constructing arguments
Target audience	Age groups - teenage/adult
Timing	90 minutes
Input	Access to internet for research and documentation, white paper, vide-projector, flipchart, and markers
Description	The trainer asks participants to form teams of 3 people. Then, present the task, common for all teams: to write a 1-page paper that will convince their peers to reduce the energy consumption in their school (institution). Afterwards, the trainer will provide participants with a guide of steps that they should take into account when solving the task (projected on the screen): **1) All reasoning has a PURPOSE** • State your purpose clearly • Distinguish your purpose from related purposes • Check periodically to be sure you are still on target • Choose significant and realistic purposes **2) All reasoning is an attempt to FIGURE something out, to settle some QUESTION, solve some PROBLEM** • State the question at issue clearly and precisely • Express the question in several ways to clarify its meaning and scope • Break the question into sub-questions • Distinguish questions that have definitive answers from those that are a matter of opinion and from those that require consideration of multiple viewpoints

[6] Adapted from (Paul & Elder, 2008, pg. 4-6).

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	3) All reasoning is based on ASSUMPTIONS • Clearly identify your assumptions and determine whether they are justifiable • Consider how your assumptions are shaping your point of view **4) All reasoning is done from some POINT OF VIEW** • Identify your point of view • Seek other points of view and identify their strengths as well as weaknesses • Strive to be fair-minded in evaluating all points of view **5) All reasoning is based on DATA, INFORMATION and EVIDENCE** • Restrict your claims to those supported by the data you have • Search for information that opposes your position as well as information that supports it • Make sure that all information used is clear, accurate, and relevant to the question at issue • Make sure you have gathered enough information **6) All reasoning is expressed through, and shaped by, CONCEPTS and IDEAS** • Identify key concepts and explain them clearly • Consider alternative concepts or alternative definitions of concepts • Make sure you are using concepts with care and precision **7) All reasoning contains INFERENCES or INTERPRETATIONS by which we draw CONCLUSIONS and give meaning to data** • Infer only what the evidence implies • Check inferences for their consistency with each other • Identify assumptions that lead to inferences

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8) All reasoning leads somewhere or has IMPLICATIONS and CONSEQUENCES

- Trace the implications and consequences that follow from your reasoning
- Search for negative as well as positive implications
- Consider all possible consequences

For each stage provide and discuss the following **guiding questions** using the elements of thought:

PURPOSE:

- What am I trying to accomplish?
- What is my central aim? My purpose

QUESTIONS:

- What question am I raising?
- What question am I addressing?
- Am I considering the complexities in the question?

INFORMATION:

- What information am I using in coming to that conclusion?
- What experience have I had to support this claim?
- What information do I need to settle the question?

INFERENCES/CONCLUSIONS:

- How did I reach this conclusion?
- Is there another way to interpret the information?

CONCEPTS:

- What is the main idea here?
- Can I explain this idea?

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	ASSUMPTIONS: • What am I taking for granted? • What assumption has led me to that conclusion? **IMPLICATIONS/CONSEQUENCES:** • If someone accepted my position, what would be the implications? • What am I implying? **POINTS OF VIEW:** • From what point of view am I looking at this issue? • Is there another point of view I should consider? At the end of the process, each team has to present the final product and the trainer ask other participants to evaluate the impact of the papers.
Learning method	Brainstorm, guided discussion, feedback
Visual support	-

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5 Spinner

Exercise No. 5	Spinner [7]
Objective	Understanding the role of questions for critical thinking
Target audience	Teenage/adult
Timing	90 minutes
Input	White paper, pencil, flipchart, and markers
Description	The trainer divides the participants into two separate groups: Team A and Team B. Then, ask participants from both teams to form the working groups in form of a circle. Next, the trainer asks the participants from team A to remember the last book they read (or a journal article) and to write a maximum 3 page paper about it. The trainer gives the same assignment to team B but presents the team members a printed A4 paper with the fiction or nonfiction spinner (or writes it down with a marker) and a pencil. Next, the trainer asks each participant from team B to spin the pencil and then write the answer to the question indicated by the pencil. If they land on the same question more than once, the trainer instructs them to spin again. This step will be repeated, until the participants answer all the questions. In the end, the trainer collects the answers from both teams and offers general feedback, stressing the importance of questions in the critical thinking process. Also, the trainer asks the participants to evaluate how easy/difficult was the process for members of team A and team B and compares the results for the audience.

[7] http://ilove2teach.blogspot.com/2012/09/reader-response-freebies.html

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	TIPS: It is important for the trainer to address the importance of questions in guiding the critical thinking process and also to present some strategies to compensate the limitations of working memory and overcome the cognitive biases (e.g. Heuer's decomposition and externalization; "decomposition means breaking a problem down into its component (…) and externalization getting the decomposed problem out of one's head and down on paper or on a computer screen in some simplified form that shows the main variables, parameters, or elements of the problem and how they relate to each other"[8]).
Learning method	Brainstorming, demonstration, guided discussion, feedback
Visual support	Printed graphics representing the spinners

[8] Richards. J. Heuer, Psychology of intelligence analysis, Center for the study of intelligence, CIA, 1999, p. 86-87

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Figure 2. Fiction spinner

Figure 3. Nonfiction spinner

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6 The 6 questions exercise

Exercise No. 6	The 6 questions exercise [9]
Objective	Understanding the role of questions for critical thinking
Target audience	Age groups - teenage/adult
Timing	45 minutes
Input	Internet access for research and documentation, white paper, flipchart, and markers
Description	The trainer divides the group of participants in pairs. Then ask them to choose an article related to a recent event or development in their local language (e.g. immigration, global warming or development of technology like internet of things, artificial intelligence) and present it to the audience. Next, the trainer asks each team to provide answers to all 6 questions in the order presented in *Figure 4.* In the end, the trainer asks each group to decide if the article can be trustworthy or not, based on the answers provided to the guiding questions, stressing the importance of questions for the critical thinking process.
Learning method	Demonstration, feedback
Visual support	Printed graphic representing *Figure 4*

[9] Adapted from Watanabe-Crockett, How to Develop A Critical Thinking Mindset in Elementary Students, 2016

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Steps to a critical thinking process (5WH)

1. Evaluate the author of the message - Who

- Who is the person that said it?
- Does is matter ?
- What position does the author have?
- Is it well-known/famous?

2. Evaluate the communication message - What

- What was the message?
- Is the message based on fact or it is a personal opinion?
- Does the message present the whole picture of the issue in question?
- Do you feel that the message is incomplete? Is something missing?

3. Evaluate the communication environment - Where

- Where was the message delivered?
- Was the message delivered in public or private environment?
- Does the communication environment allow for other person to express different opinions?
- Were there any side views expressed with regards to this message?

4. Evaluate the time span (opportunity) - When

- When was the message sent?
- Was it during, before or after an important event?

5. Evaluate the reason of communication - Why

- Why was the message delivered?
- Did the author express/explain his/her rationale?
- Were there any interests in delivering the message (e.g., image impact)?

6. Evaluate the communication process - How

- How was the message delivered - in writing or orally?
- What was the tone used by the author (happy, sad, angry, impassive)?
- Was the message easy to understand?

Figure 4. Steps to a critical thinking process (5WH)

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7 Guided discussion

Exercise No. 7	Guided discussion [10]
Objective	Understanding the importance of constructing valid arguments and developing the critical thinking skills
Target audience	Age groups - teenage/adult
Timing	30 minutes
Input	Internet access for research and documentation, video projector, white paper, flipchart, and markers
Description	The trainer divides the participants in two teams and assigns the teams with the task: Team 1 – PRO, and Team 2 – CON; with regards to the hypothesis: students using computers during the lectures in the classrooms. In the end, each team will present their arguments. **TIPS:** The trainer have to address the problem of logical fallacies, giving the example of hasty or faulty generalisation and the fact that sometimes the statistics can be misleading, if the numbers are interpreted in a biased way or the research is not done according to the methodology. "Hasty generalization (also known as: argument from small numbers, statistics of small numbers, insufficient statistics, argument by generalization, faulty generalization, hasty induction, inductive generalization, insufficient sample, lonely fact fallacy, over generality, overgeneralization, unrepresentative sample) can be defined as the process of drawing a conclusion based on a small sample size, rather than looking at statistics that are much more in line with the typical or average situation" [11]. **YouTube video recommended about hasty generalization:** https://www.youtube.com/watch?v=b_UqIfw7Zmw

[10] https://www.slideshare.net/NikPeachey/exploiting-infographics-developing-critical-thinking
[11] https://www.logicallyfallacious.com/tools/lp/Bo/LogicalFallacies/100/Hasty-Generalization

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Learning method	Demonstration, feedback
Visual support	YouTube video

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8 Six steps in critical thinking

Exercise No. 8	Six steps in critical thinking [12]
Objective	Understanding the role of questions and paraphrasing in the process of critical thinking
Target audience	Age groups - teenage/adult
Timing	60 minutes
Input	Internet access for research and documentation, video projector, white paper, flipchart, and markers
Descripción	The trainer asks the participants to follow the TED talk related to the global warming issue available at the link below (please use the transcription for your local language): https://www.ted.com/talks/greta_thunberg_school_strike_for_climate_save_the_world_by_changing_the_rules/transcript Then, the trainer provides each participant the printed chart and ask them to fill in the CHART (*Figure 5*). The scope is to check if the participants recall all the points raised by the speaker. Also, in order to response to all the questions listed in the chart, the participants have to evaluate and analyse the main ideas presented. **TIPS:** In the end the trainer has to stress the importance of questions in the process of critical thinking and also the importance of paraphrasing, as the first level of reading proficiency and understanding [13].
Learning method	Instruction, demonstration, feedback
Visual support	Printed chart

[12] https://www.educatorstechnology.com/2013/05/a-must-have-chart-featuring-critical.html
[13] https://www.criticalthinking.org/files/ReadWritingTestOp1.pdf

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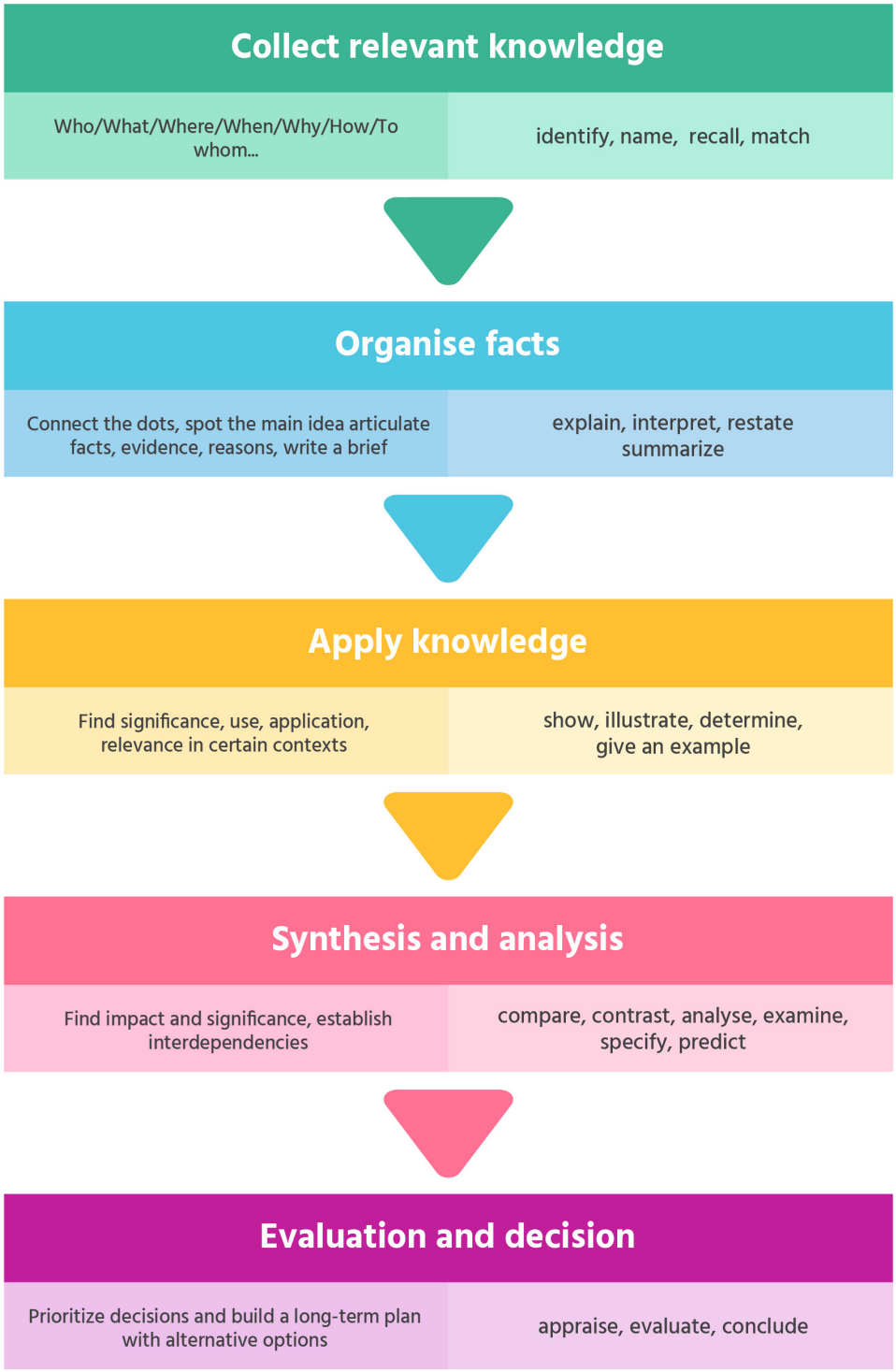

Figure 5. Critical thinking skills

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Further resources

- Critical thinking Fundamentals: Introduction to critical thinking, YouTube video available at https://www.youtube.com/watch?v=Cum3k-Wglfw
- Moore, D. T. (2007). Critical Thinking an Intelligence Analysis. Occasional Paper Number Fourteen. Washington, DC: National Defense Intelligence College.
- Paul, R., & Elder, L. (2008). The Miniature Guide to Critical Thinking. Concepts and Tools. Dillon Beach: Foundation For Critical Thinking Press.
- Hasty Generalization, YouTube video available at: https://www.youtube.com/watch?v=b_UqIfw7Zmw

Logistics

- Working space description: video projector and screen, laptop, white A4 paper, flipcharts, markers, chairs that can be placed flexibly around the room
- Lab support: Internet access, links available if any

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- https://www.ted.com/talks/greta_thunberg_school_strike_for_climate_save_the_world_by_changing_the_rules/transcript
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- https://www.slideshare.net/NikPeachey/exploiting-infographics-developing-critical-thinking
- https://www.logicallyfallacious.com/tools/lp/Bo/LogicalFallacies/100/Hasty-Generalization
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- https://www.criticalthinking.org/files/ReadWritingTestOp1.pdf

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