

Critical Thinking



COPAS

4/16/15

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CONTEST

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36. TOWN ↓	37. <u>MAN</u> BOARD	38. XXPOSURE	39. F F R R I I E STANDING E N MIS N D D	40. J J A A C J A K - A - C S S C K K S S	41. HURRY ↑	42. MIND MATTER

Critical Thinking is...

- “The ability to cross-examine evidence and logical argument. To sift through all the noise.”
-Richard Arum, sociology professor
- “Thinking about your thinking, while you’re thinking, in order to improve your thinking.”
-Linda Elder, educational psychologist

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Critical Thinking is...

Critical Thinking is an organized and disciplined way of thinking. It is...

Thinking Logically
With **Clarity** and
Precision

Using an Approach
That is **Fair**
and **Accurate**

Focusing on
Information
That is **Relevant**

Critical Thinking is an intellectual skill

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“Be careful how you interpret the world: It is like that.”

-Eric Heller



Critical Thinkers

- Understand logical connections between ideas
- Identify, construct and evaluate arguments
- Detect inconsistencies and common mistakes in reasoning
- Solve problems systematically
- Identify the relevance and importance of ideas
- Reflect on the justification of one's own beliefs and values

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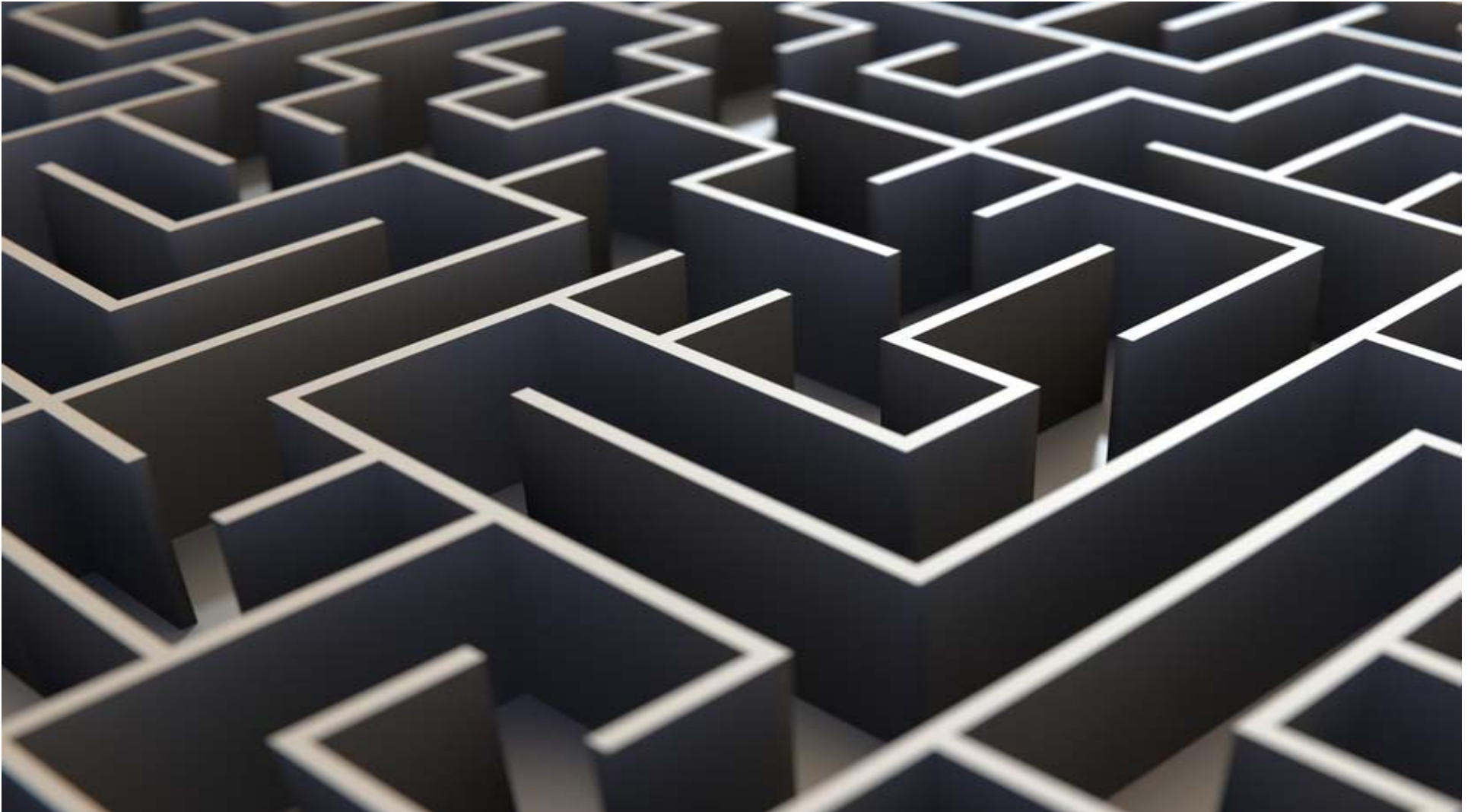
Critical Thinkers...

- Exhibit less bias
- Have fewer negative life outcomes due to poor decision making
- Have deeper job knowledge
- Outperform others in producing creative ideas
- Experience higher overall educational and job attainment
- Experience higher overall job performance

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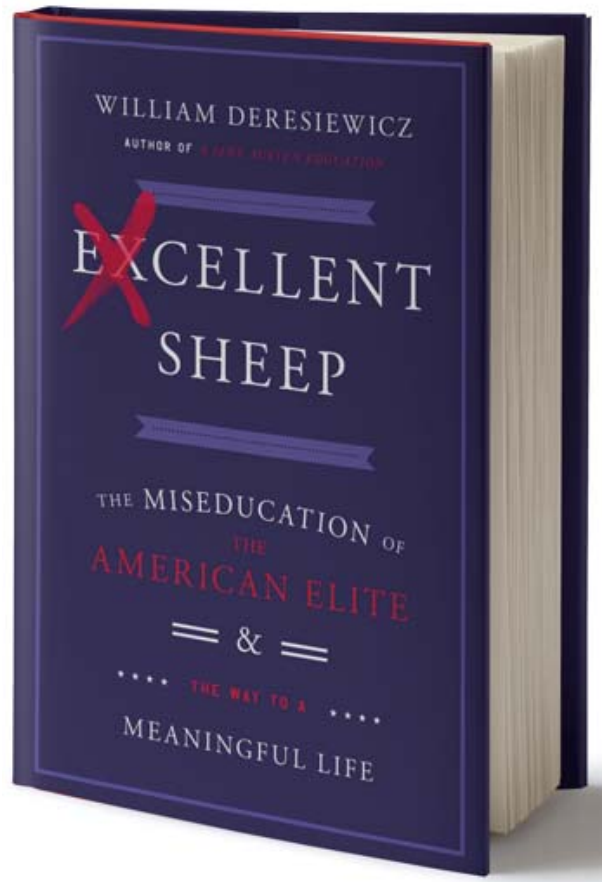


#1 Skill of Increasing importance



A survey of 318 companies found that 93 percent cite:

“critical thinking, communicating and problem-solving skills as more important than a candidate’s undergraduate major.”



“four years is scarcely adequate to make a decent start of learning to analyze the arguments of others and to make your own in turn: to marshal evidence, evaluate existing authorities, anticipate objections, synthesize your findings with a logically coherent structure, and communicate the results with clarity and force.”

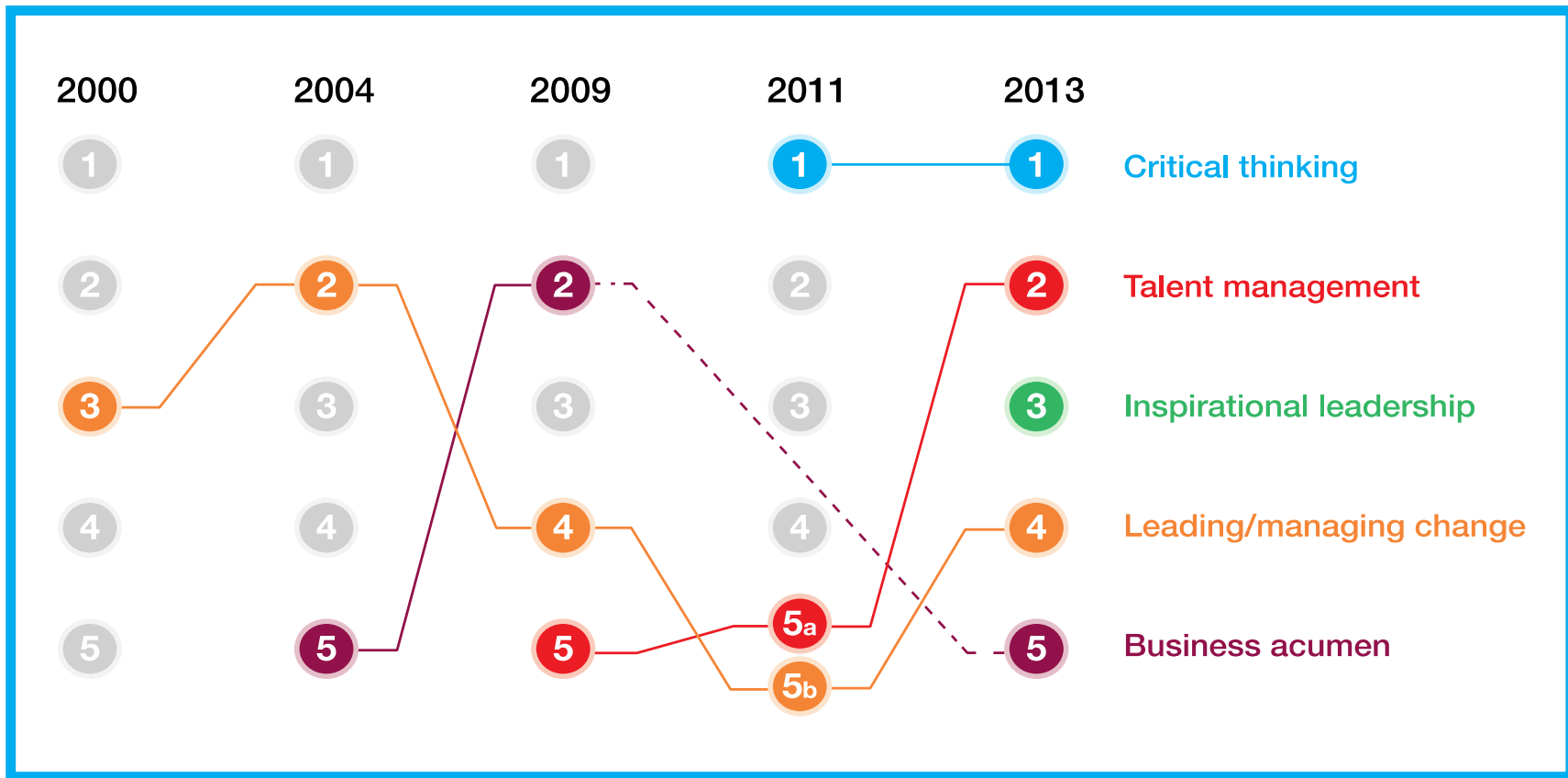
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No wonder it's a Hot Topic!



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But there's a problem....

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The Skills Gap is Real!

Employers' Ratings of Critical Thinking Skills by Population

RATING	High School Grads	2yr College Grads	4yr College Grads
"Deficient"	70%	23%	9%
"Adequate"	30%	73%	63%
"Excellent"	0%	4%	28%

Source: Critical Skills Needs and Resources for the Changing Workforce (SHRM and WSJ.com/Careers, 2008)

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The Skills Gap is Real!

As you look down in the organization at the next generation of leadership talent, what capabilities, skills, knowledge, attitudes, competencies, etc. are most lacking?

32.5%

Critical thinking:
strategic thinking,
creative thinking,
decision making
and problem solving

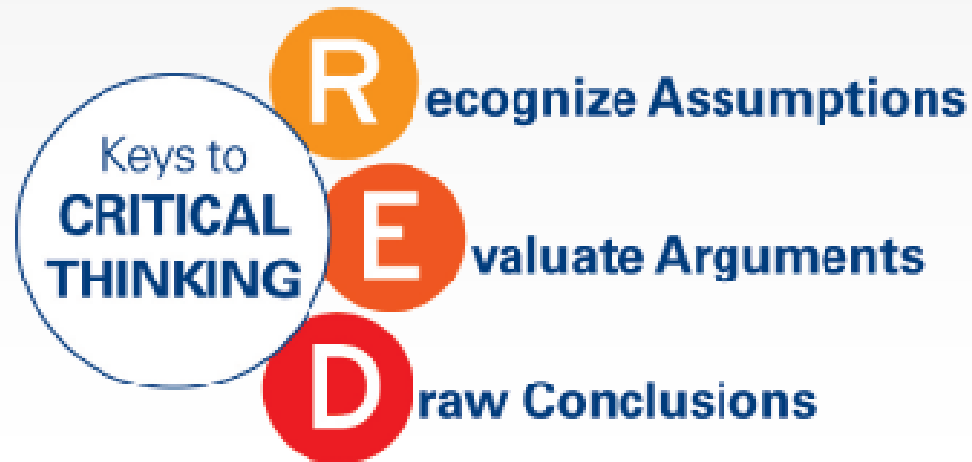


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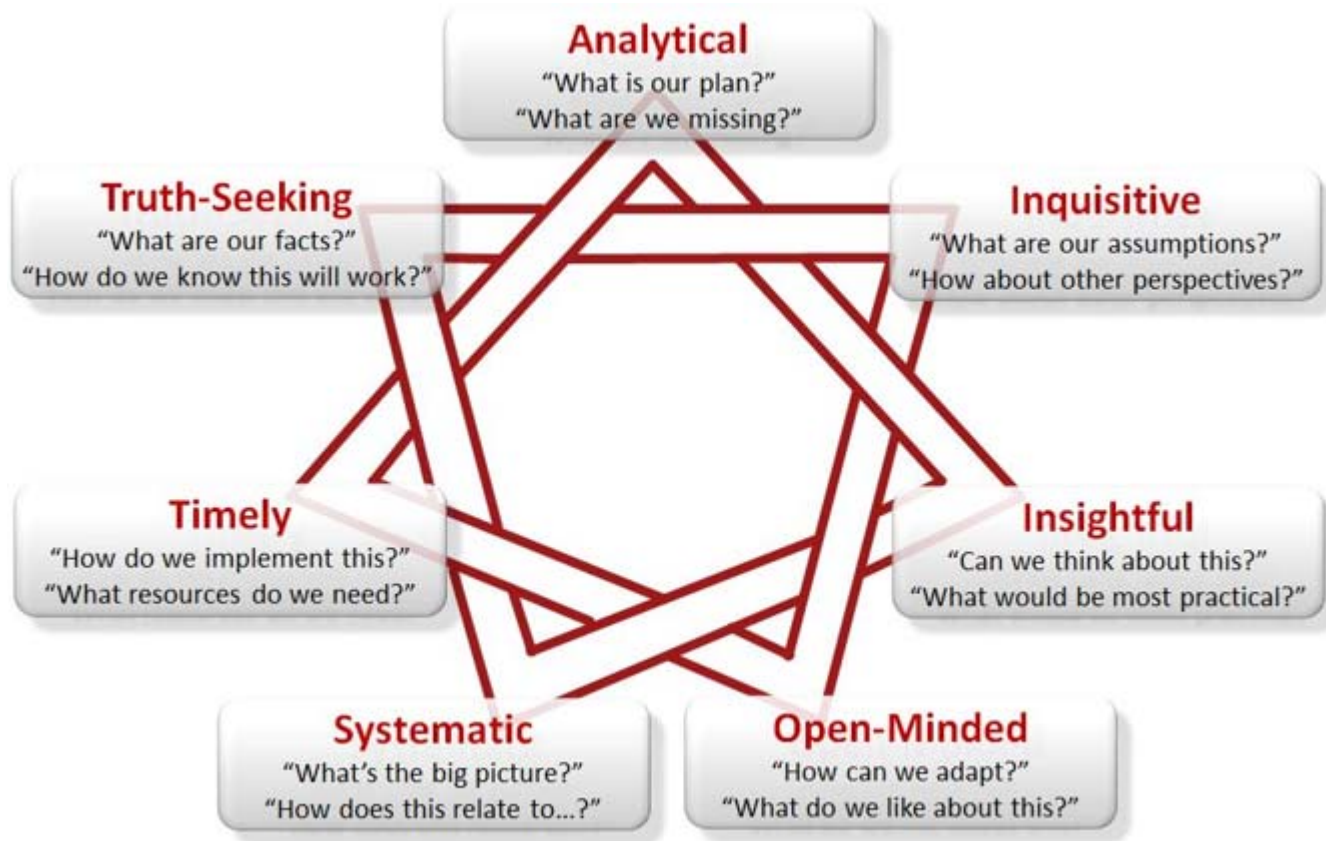
The Pearson TalentLens Approach

To Think Critically, Think **RED**



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Thought Process Model



Stop and Think

- What is the situation?
- Is this situation a high priority/high risk or can it wait?
- When does a decision need to be made?
- What are you trying to accomplish?

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Recognize Assumptions

- Define problems more clearly
- Identify the real issue
- Solve the right problem



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Recognize Assumptions

- What is the key issue/problem?
- What information/facts do you have?
- What values conflicts may be coloring the assumptions presented?
- Is there solid evidence to support assumptions?
- Who are the key stakeholders & what are their viewpoints?
- What else do you need to know?

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Moneyball

Defining the Problem Correctly



Recognize Assumptions

- What did they think they knew?
- What didn't they really know?
- What were the inaccurate assumptions held by the team?

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Evaluate Information

- **Relevance** of reasons presented
- **Clarity and accuracy** of the evidence presented
- **Credibility & Fairness** of the information
- Your own **biases and emotions**



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Moneyball

Looking at the Right Things



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Evaluate Information

- What are the pros & cons of the proposed solution?
- What are your biases?
- Who could you run your ideas by for different opinions ?
- What key points/ perspectives do you need to keep in mind as you evaluate the options?
- What impact could the decision have on others?

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How to Examine Information

- Determine criteria for making a decision
- Make a list of pros and cons for each option
- Create if...then... statements
- Analyze issues from multiple perspectives
- Play personal devil's advocate
- Keep focused on the evaluating the best decision
- Make sure evidence supports your conclusion and don't try to make it fit

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What about this?

- Oil companies will likely have to cut costs deeper than this year's \$126 billion reduction in annual spending if global oil prices remain at around \$60 per barrel, Wood Mackenzie said Monday in an analysis. This is because the industry's breakeven oil price declined by \$20 per barrel to \$72 per barrel this year, it said. Some companies may have to target dividends and share repurchase programs, while some may have to divest assets to adjust balance sheets, the firm said.
- Questions for discussion
 - What assumptions are being made?
 - What are the alternatives to explore?
 - Are they being objective?
 - Is the problem stated correctly?
 - What questions do you have?
 - What information do you want?

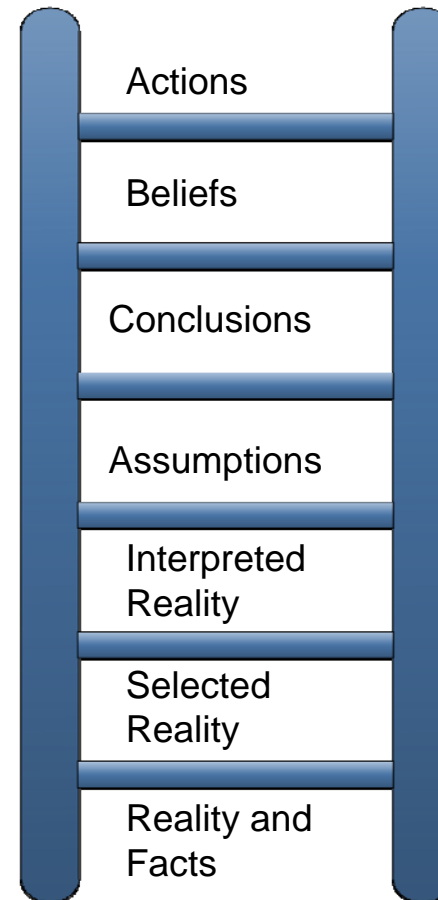
Tools

Ladder of Inference – Validate Thought Process

Process

- Starting at the bottom of the ladder, we have reality and facts. From there, we:
 - Experience these selectively based on our beliefs and prior experience.
 - Interpret what they mean.
 - Apply our existing assumptions, sometimes without considering them.
 - Draw conclusions based on the interpreted facts and our assumptions.
 - Develop beliefs based on these conclusions.
 - Take actions that seem "right" because they are based on what we believe.

Tool



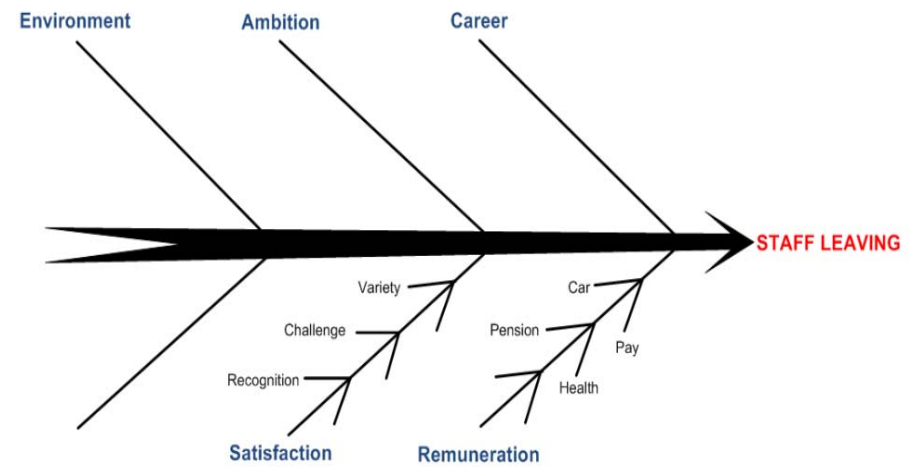
Cause and Effect Diagrams – Identify Causes of Problems

Process

- Identify the problem
- Identify major factors
- Identify possible causes of each
- Analyze diagram

Tool

- Isakawa (Fishbone) Diagram



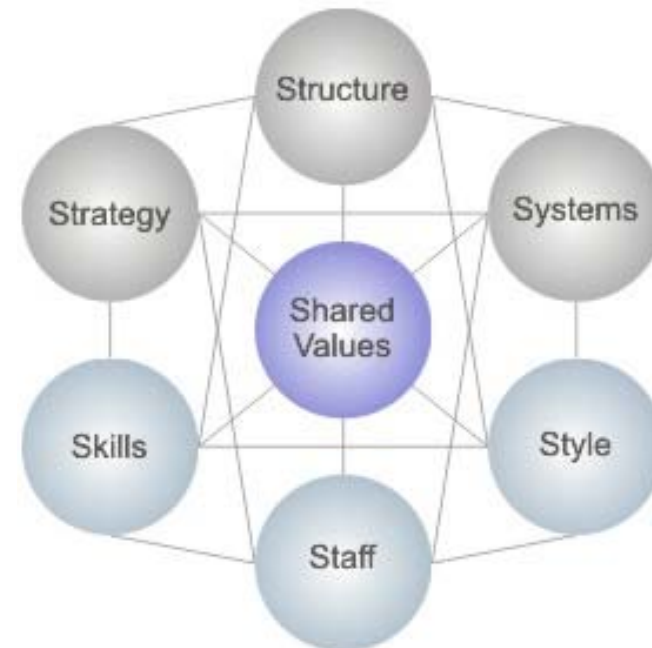
Impact Analysis

Process

- Gather a team with the right information
- Brainstorm major areas that may be affected
- Identify the elements of the major areas that may be impacted
- Identify the positive and negative impacts and the associated consequences
- Manage the consequences

Tool: McKinsey 7-S Model

Figure 1: The McKinsey 7S Model



Appreciation

Process

- Helps uncover facts we may have missed
- Start with a fact and ask “so what?”
 - What are the implications?
 - Why is this fact important?
- The first answer will drive you to a line of questioning
- Be sure to repeat several times to ensure all bases are covered

Tool: So what?



Decision Matrix

Process

- Making a choice taking into account many factors
 - Write the key criteria down the left hand column
 - Give each criteria a weight from 1-10
 - Write each option across the top
 - Evaluate each option against each criteria, rating the fit from 1-10
 - Multiply the weight of the criteria by the score of the option on that criteria
 - Add the columns to identify the best choice

Tool

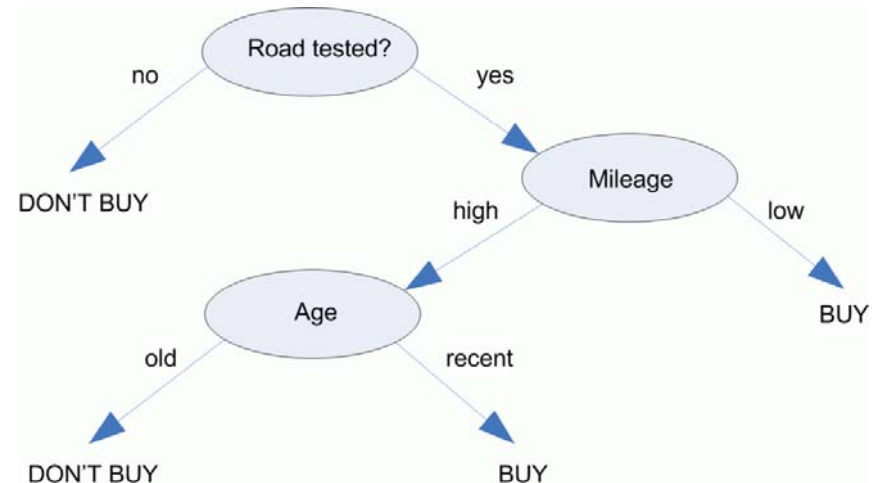
	A	B	A*B	D	A*D
Criteria	Weight	House 1 Rating		House 2 Rating	
3 Bedrooms	10	4 (2 bed)	40	9 (3 large bed)	90
2 Bathrooms	8	8 (3 bath)	64	6 (2 small baths)	48
Close to Work	4	9 (close)	36	7 (relatively close)	28
Price	6	9 (under market)	54	6 (above market)	36
Totals			194		202

Decision Trees

Process

- Choosing by valuing different options
 - Determine the potential consequences of making each decision and follow them to their natural conclusion
 - Add clarity by adding probability of each outcome

Tool: Buying a Used Car



Six Thinking Hats

Process

- Looking at a decision from different perspectives
- Move outside habitual thinking style to have a more well rounded view
- Act as if you are coming at a decision from one of the 6 key perspectives
- Rotate (or have different people play each role)
- Make the decision using the full spectrum of perspectives

Tool: Six Thinking Hats

- Each hat has a different style of thinking
 - White - data and information
 - Red – intuition and emotion
 - Black – risks, problems and downsides
 - Yellow – benefits and value
 - Green – creativity
 - Blue – process control

Draw Conclusions

- **Inference** - the act or process of reaching a conclusion about something from known facts or evidence
- **Deduction** - a process of reasoning in which a conclusion follows necessarily from the premises presented, so that the conclusion cannot be false if the premises are true
- **Interpretation** - the way something is explained or understood

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Impact of Focus



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Draw Conclusions

- What specific evidence is driving your conclusion?
- Is there new evidence that would have an impact?
- What does your common sense and experience tell you?
- What opportunities does your conclusion provide?
- What risks are associated with your conclusion?
- What is the timeline (would your decision be different in a month)?

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Draw Conclusions

- Ask yourself “Is anything missing?” “Are there other alternatives I may have missed?”
- Clarify your criteria for evaluation and identify if any of the alternatives can be eliminated
- Which alternative best matches the success criteria?

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Develop a Plan of Action

- What are the consequences of this decision?
- What plans need to be made to implement this decision?
- What types of resources are needed to implement this decision?

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The RED Model

To Think Critically, Think **RED**

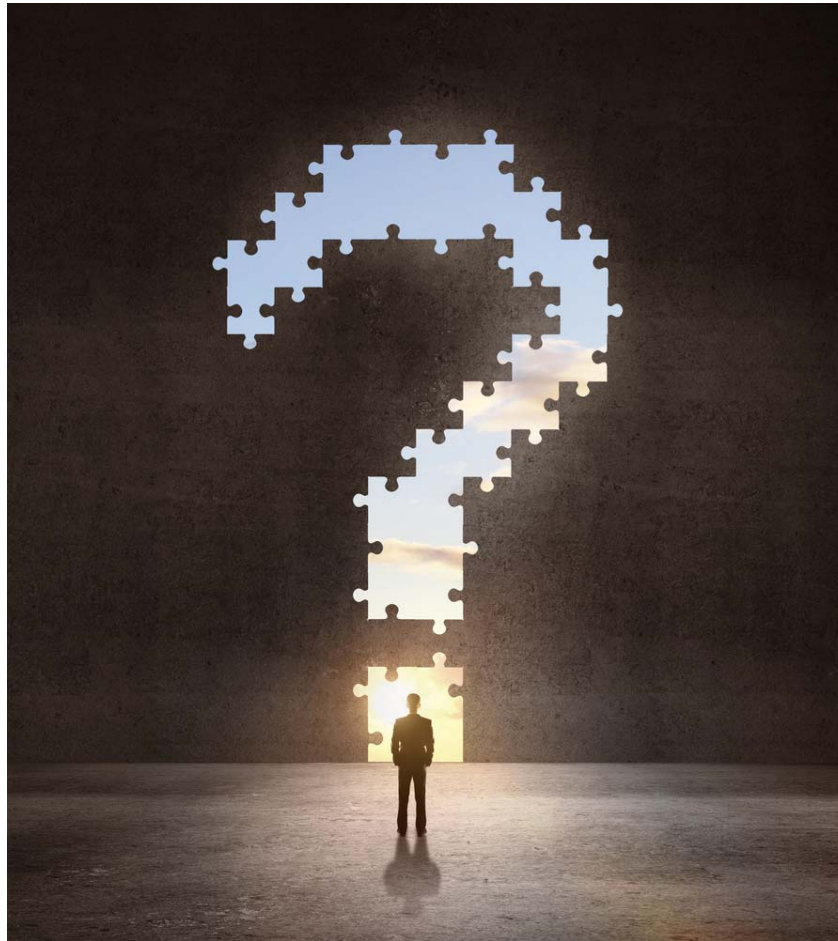


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Suggested Next Steps

- Consider the RED Model
- Create a common language
- Assess your culture
- Be deliberate
- Create visual reminders of RED
- Keep the conversation going

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One Solution



Critical Thinking
University

Become a Better Thinker
In Just One Hour a Week.

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Topics Covered in the CTU

- Implicit vs. Explicit Assumptions
- Fact vs. Opinion
- Seeking alternative viewpoints
- Logical fallacies
- Common forms of bias
- Persuasion techniques
- Creating objective decision making criteria
- Decision Matrix technique
- Identifying politics and spin
- Analysis Paralysis
- Group think
- Complex problem-solving

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Resources

- Website: ThinkWatson.com
- Blog: Critical-Thinkers.com
- For CTU Breanne.Harris@pearson.com
- On-Site Workshops: Amy.Ferris@pearson.com

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Contact Information

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