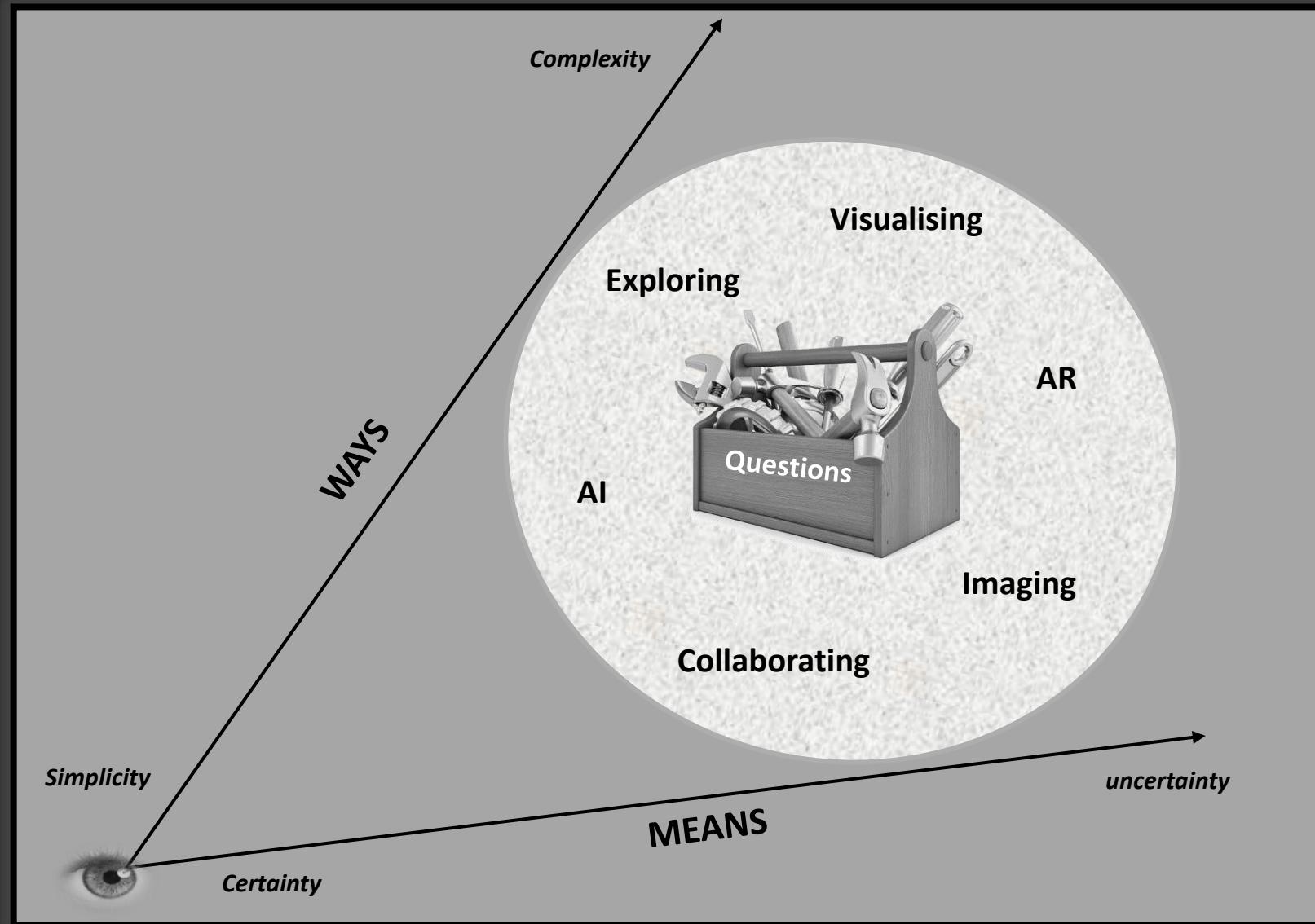


# USEFUL TOOLS

## Finding ways and means



# USEFUL TOOLS GATEWAY

## Contents



*Click to access*

*F = frame number*

### Thinking focus

[Constructing 'effective' questions \(F126\)](#)

[Exploring different perspectives \(127\)](#)

[Streaming questions \(F128\)](#)

[Devising questions \(129\)](#)

[Being clear minded\(F130\)](#)

[Keeping possibilities open \(131\)](#)

[Speculating hypothetically \(F132\)](#)

### Representing focus

[Visual perceptions \(F133\)](#)

[Mapping conceptual thinking \(F134\)](#)

[Patterning relationships \(F135\)](#)

[Representing flow \(F136\)](#)

[Imaging metaphorically \(F137\)](#)

### Participating focus

[Adjust inquiry tactics \(F138\)](#)

[Using action research \(F139\)](#)

[Working with artificial intelligence \(140\)](#)

[Being discerning \(F141\)](#)

[Working cooperatively \(F142\)](#)



Back

# Constructing 'effective' questions

Provide opportunities  
for all voices to be heard

## Phase 1 – Select 2 or 3 Generative questions

FORM	What is it like?
FUNCTION	How does it work?
CAUSATION	Why is it like it is?
CONNECTION	How is it connected to other things?
CHANGE	How is it changing?
PLACE	What is the role of place here?
RESPONSIBILITY	Who might be responsible?
CARE	How could people care for others?
ETHICAL	Where is the ethical reasoning?
AESTHETIC	How is aesthetic sense manifest?
THINKING	How is the thinking evolving?
INNOVATION	What might innovation add?

## Phase 2 – Identify consequent questions

### Generic strategies

Wonder questions-Vexed questions-what 'if' questions

### Strategic focus

- Generate fluency
  - Multiple questions and ideas
  - Many potential solutions
  - Lots of possibilities to explore
  - Various incongruities to consider
- Enhance diversity
  - Diverse ideas, values and opinions...
  - Alternative views of 'what' and 'how'...
  - Dynamic, creative and adaptable thoughts...
  - Responsiveness to changing conditions...
- Provoke originality
  - New questions and ideas spawned
  - Better questions and ideas identified
  - Unusual questions and ideas revealed
  - Nuanced questions and ideas generated
- Trigger detail
  - More detailed questions and ideas
  - Questions and ideas better clarified
  - Greater sense of contextual issues
  - Different complexities for reflection

Use these strategies, and others, singly or in combinations  
but make sure

Purposes are clear

## Phase 3 – Group consequent questions

Group questions that address similar issues, thoughts or perspectives. In some situations, it may be helpful to give a 'title' that describes to each grouping.

## Phase 4 – Refine consequent questions

Engage in conversations to review the questions and where necessary refine or modify them. On occasion it may be best to leave these arguments unresolved.

## Phase 5 – Prioritise consequent questions

Record the group 'titles' and their contents. This represents a template for prioritizing.

- Number each item displayed
- Give the same number of 'dot stickers' (physical or electronic) to everyone involved. Limit the number to four to six to promote careful thought
- Place the 'dot stickers' adjacent to the items considered to be most important
- Count the 'dot stickers' to calculate the priority order.



'Sticky notes' are a good way to conduct this process. They can be displayed for all to see and easily moved around as required. And their original source can be kept private

# Exploring different Perspectives

Edward De Bono's *Thinking Hats* promote different kinds of thinking which generate a vast array of questions.

The Hats can be applied singly or in combinations provided the characteristic intention behind each one remains clear



White hat	Red hat	Black hat	Yellow hat	Green hat	Blue hat
Virgin white, pure facts, figures and information	Seeing red, emotions and feelings, hunches and intuitions	Devil's advocate, negative judgement, why it will not work	Sunshine, brightness and optimism, positive, constructive	Fertile, creative, plants springing from seeds, movement and provocation	Cool and control, orchestration, thinking about thinking
<ul style="list-style-type: none"><li>▪ Distinguishing parts</li><li>▪ Focusing questions</li><li>▪ Proving facts</li><li>▪ Establishing authenticity</li></ul>	<ul style="list-style-type: none"><li>▪ Exploring feelings</li><li>▪ Contemplating emotions</li><li>▪ Being personal</li><li>▪ Escaping logic</li></ul>	<ul style="list-style-type: none"><li>▪ Examining fit</li><li>▪ Pursuing errors</li><li>▪ Investigating limitations</li><li>▪ Identifying faults</li></ul>	<ul style="list-style-type: none"><li>▪ Seeing value</li><li>▪ Considering benefits</li><li>▪ Generating proposals</li><li>▪ Seeking opportunities</li></ul>	<ul style="list-style-type: none"><li>▪ Exploring alternatives</li><li>▪ Challenging ideas</li><li>▪ Moving forward</li><li>▪ Postponing judgement</li></ul>	<ul style="list-style-type: none"><li>▪ Defining problems</li><li>▪ Monitoring processes</li><li>▪ Sequencing actions</li><li>▪ Summarizing situations</li></ul>
Fact Quest	Emotion Quest	Judgement Quest	Optimism Quest	Creativity Quest	Reflection Quest

# Streaming questions

## A note of value

The most valuable thing a teacher can impart to children is not knowledge and understanding per se but a longing for knowledge and understanding, and an appreciation for intellectual values, whether they be artistic, scientific, or moral. It is the supreme art of the teacher to awaken joy in creative expression and knowledge.... .

*Albert Einstein*

Streaming focused questions	
Intentional, analytical and speculative processes	
Intention	Wetlands management
Indicative list only	Illustrative example
<b>Support questions</b> Follow thoughts and information	<ul style="list-style-type: none"><li>▪ What's the reasoning behind the proposal to control salt levels and the impact of arguments against it?</li></ul>
<b>'Check out' questions</b> Explore accuracy and reliability	<ul style="list-style-type: none"><li>▪ How reliable is the information on rising salt levels in arid areas and is it sufficient?</li></ul>
<b>Concern questions</b> Raise arguments and conflicts	<ul style="list-style-type: none"><li>▪ How might the views of stakeholders opposed to the proposed development affect the outcome?</li></ul>
<b>Follow up questions</b> Emphasise prediction and impact	<ul style="list-style-type: none"><li>▪ What are the likely consequences for survival of the wildlife and drainage of salty water?</li></ul>
<b>Creative questions</b> Spawn ideas and possibilities	<ul style="list-style-type: none"><li>▪ What might happen if ecological principles were applied to land management and conservation</li></ul>
<b>Crazy questions</b> Consider surprises and risks	<ul style="list-style-type: none"><li>▪ Could an analysis of desert environments provide some clues</li></ul>



## A note of caution

"In 80% of Socrates' dialogues there was no constructive outcome. He saw his role as simply pointing out what was wrong."

*Edward De Bono*



Back

# Being clear-minded

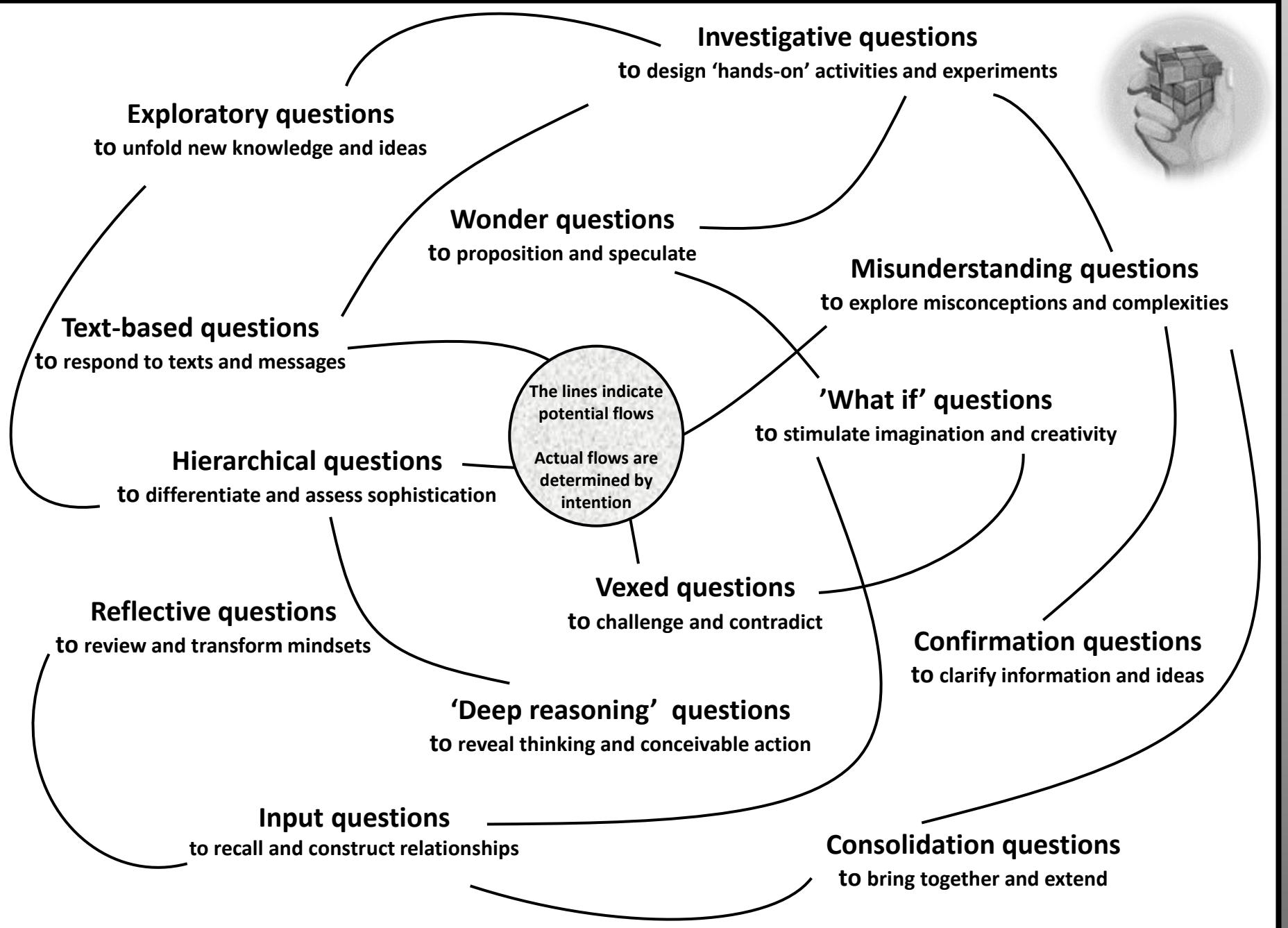
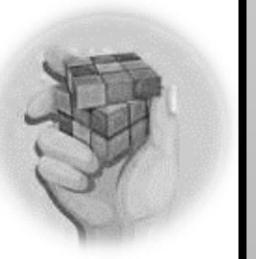
Select questions to fit purpose



There are many different types of question which are distinguished one from the other by their purpose.

A key issue is to decide on the purpose and select to most appropriate questions

A key corollary is to avoid being trapped by that decision and still consider other potential questions



# Devising questions

– different modes of thinking when devising consequent questions (CQs) and pointed questions (PQs) to explore selected generic generating questions (GGQs)

Indicative examples	Wonderment questions – searching for ideas, researching propositions, exploring the unknown...		
<b>Steam ahead</b> <i>Strategic focus – How does it work? (Function)</i> <b>Where does steam come from when water is boiled?</b>	<b>Healthy living</b> <i>Strategic focus – What is it like? (Form)</i> <b>What are the foods people need to be healthy and why are they needed?</b>	<b>Positive relations</b> <i>Strategic focus – How might people care for each other? (Care)</i> <b>Why might people who are angry, anxious, bullied or low in self-worth need support?</b>	
Indicative examples	Vexing questions – addressing dissonance, challenging explanations, evolving different possibilities...		
<b>Steam ahead</b> <i>Strategic focus – Why is it like it is? (Causation)</i> <b>Why does height above sea-level affect the boiling point of water?</b>	<b>Healthy living</b> <i>Strategic focus – How is it connected to other things? (Connection)</i> <b>Why is so much food wasted when some people are malnourished?</b>	<b>Positive relations</b> <i>Strategic focus – How is it changing? (Change)</i> <b>How can people be encouraged to face up to issues that are stressful or troubling?</b>	
Indicative examples	'What if' questions – exploring potential, considering alternatives, generating innovative solutions		
<b>Steam ahead</b> <i>Strategic focus - What might innovation add (Innovation)</i> <b>What if steam used in technological systems could be recycled for reuse?</b>	<b>Healthy living</b> <i>Strategic focus – Who might be responsible? (Responsibility)</i> <b>Might lifestyles improve if we were to review or revise our eating habits?</b>	<b>Positive relations</b> <i>Strategic focus – How is the thinking evolving? (Thinking)</i> <b>If we were to engage in projects and sports activities how might our self-worth grow?</b>	

# Speculating hypothetically

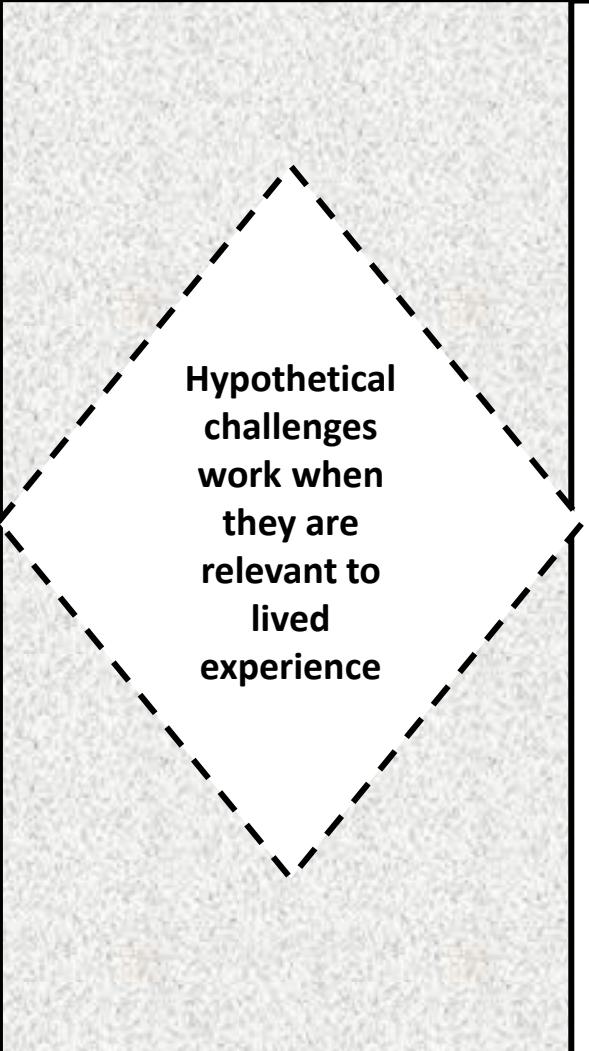
## Hypotheticals

A hypothetical is a proposition that requires a considered response.

Depending upon the complexity of the proposition, participants may need to identify and address questions and issues, explore possibilities and alternative solutions, examine human values and socio-cultural issues, and consider solutions in terms of their practicability.

A hypothetical is a challenge that focuses on – ‘what if...??? It is a valuable means of testing out possibilities, potential benefits, and difficulties inherent in ideas and practical actions.

Hypotheticals tend to raise more questions than answers



Hypothetical challenges work when they are relevant to lived experience

## ‘What if...’ questions

### Indicative examples

- If you were able to live on any planet in the solar system, where would you live?
- If you could go back in time to any point in history, where would you go?
- If you had the ability to make yourself invisible, what would you do?
- If you could be any character from a movie, which character would you be?
- If you could control your dreams, what would you dream about?
- If you could live inside a computer game, which game would you choose?
- If you could remove one of your personal characteristics, what would you choose?
- If you did not need to sleep, what would you do during the night to fill your time?
- If every human on Earth jumped into the sea at the same time, what would happen?

# Visualizing perceptions

## Visual representations

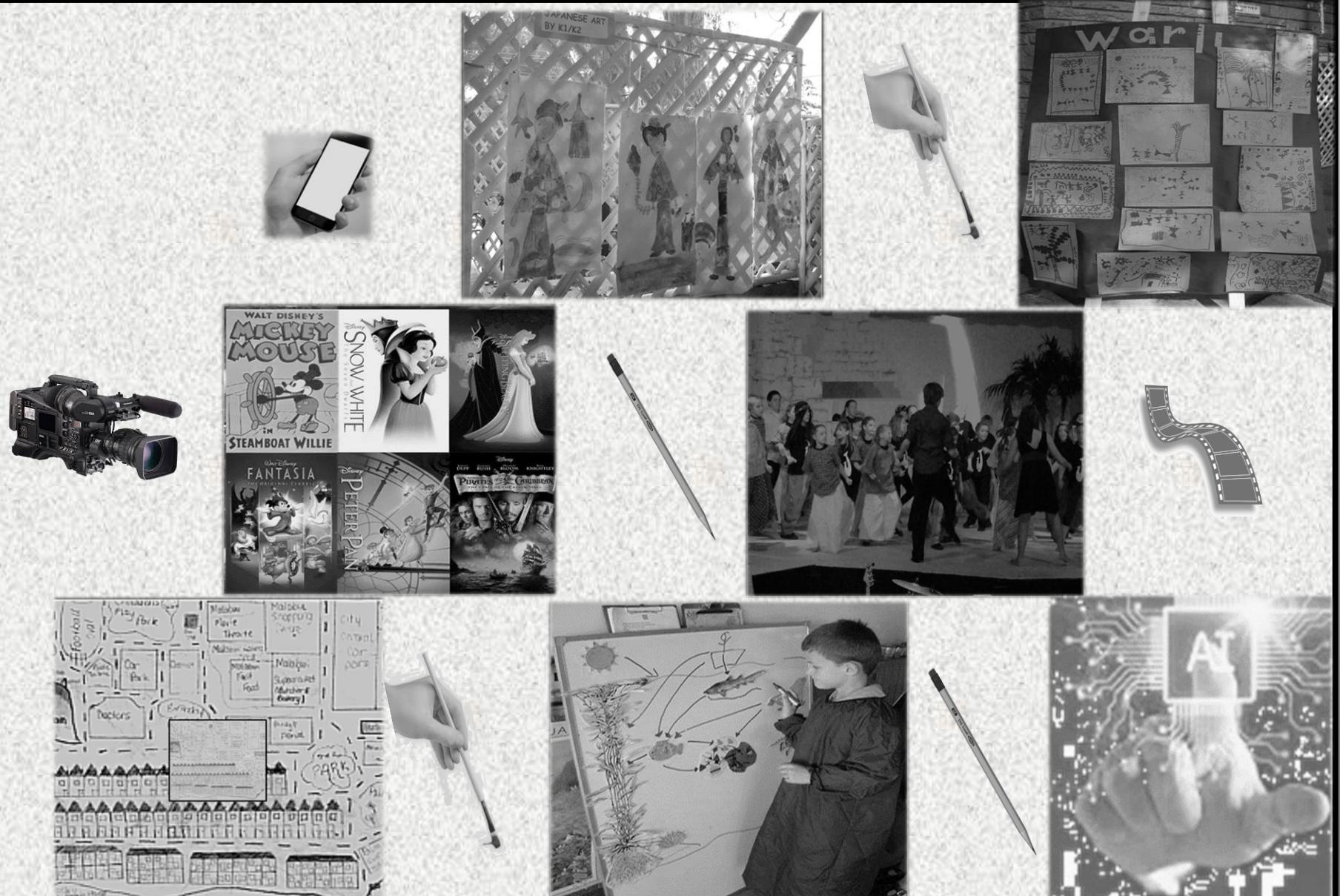
Visual perceptions can take many forms from paintings to film to virtual reality to artificial intelligence (AI).

They can be applied for a myriad of purposes encompassing the expression of conceptual ideas and practices as well as feelings and emotions

They reveal different perceptions of experience and create focal points for dialogue.



Back



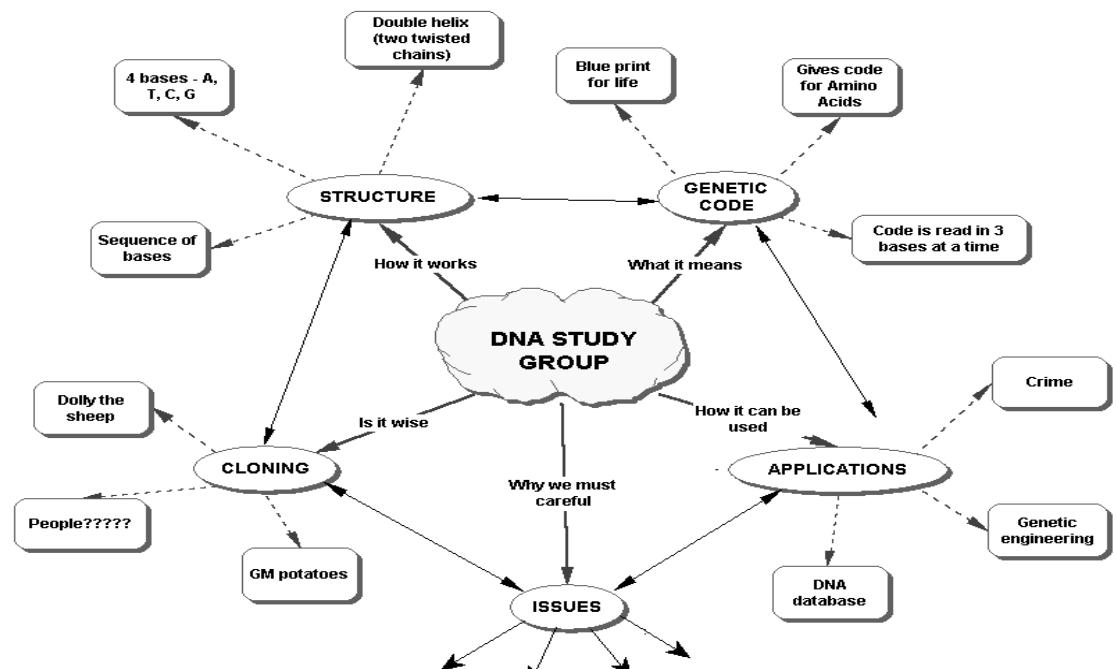
# Mapping conceptual thinking



**Mind maps and concept maps are cognitive tools. They help people gather, organize and process information and ideas, and in so doing generate insights.**

## Concept map

These maps reveal interrelationships and layers of thinking and understanding. In the example below the weighting of the arrows indicates relative significance and some of them have descriptive remarks attached to them.



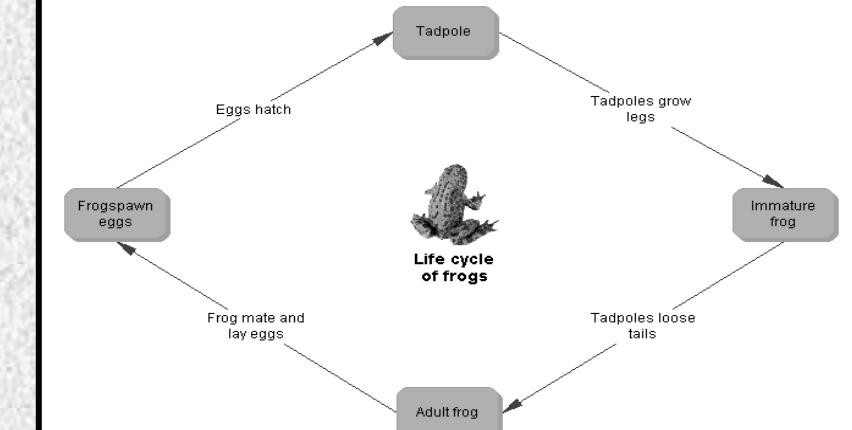
## Diagrammatic representations depict

- Relationships between causes and effects
  - Patterns of thinking involved in generating ideas
  - Sequences taken in making decisions and arriving at solutions
  - Consequences of taking specific paths or actions
  - Steps taken in carrying out plans or activities.

The pictures that emerge reveal different perceptions of experience and create focal points for dialogue.

## Cyclical map

**The main question or topic or idea is placed at the centre with the cyclical movement elements around it. The flow and chain of events are the key issues.**



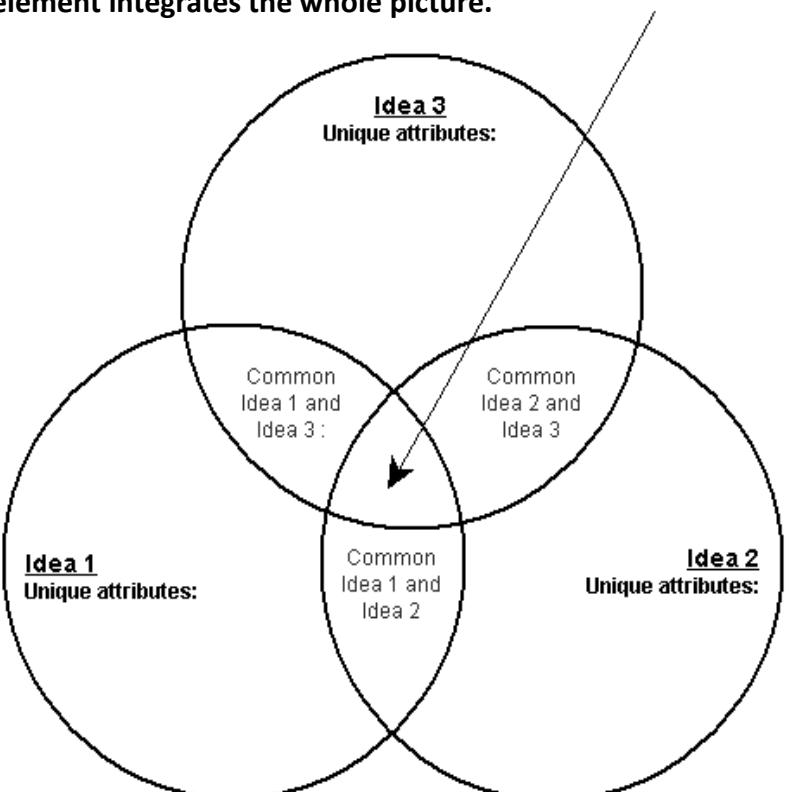
Back

# Patterning relationships

## Venn Diagrams

Venn diagrams show interrelationships. They may consist of two, three, four or more circles depending on the number of 'main elements' involved. Simple Venn diagrams put these elements into linked circles with an explanation of their characteristic attributes. More complete Venn diagrams show what is common at the intersections between the circles. The central element integrates the whole picture.

Common to Idea 1, Idea 2 and Idea 3



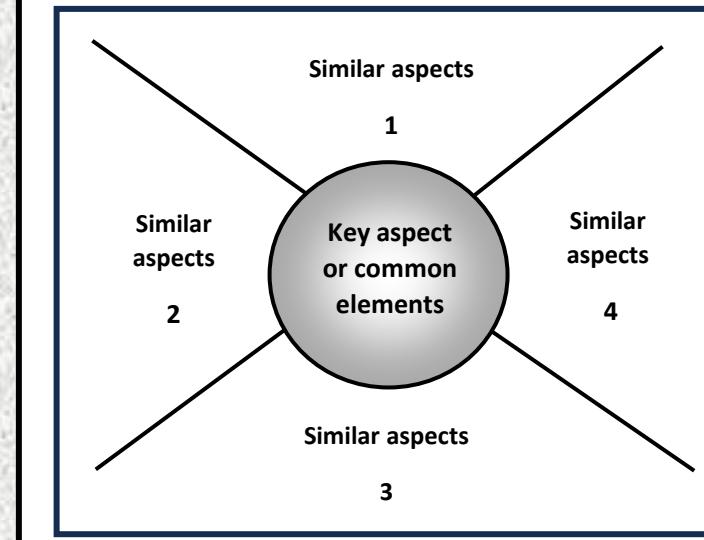
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The pictures that emerge reveal different perceptions of experience and create focal points for dialogue.

## Placemats

Placemats are a variation on a simple Venn diagram. They are a useful means of distinguishing between major and minor aspects of a question, an issue, or an idea, an event or a problem.

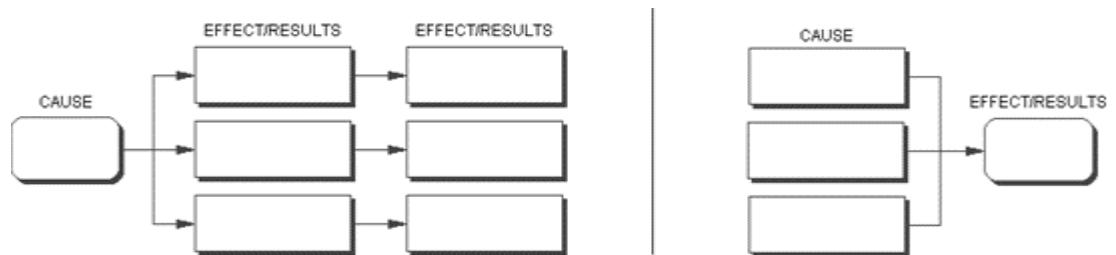


Back

# Representing flow

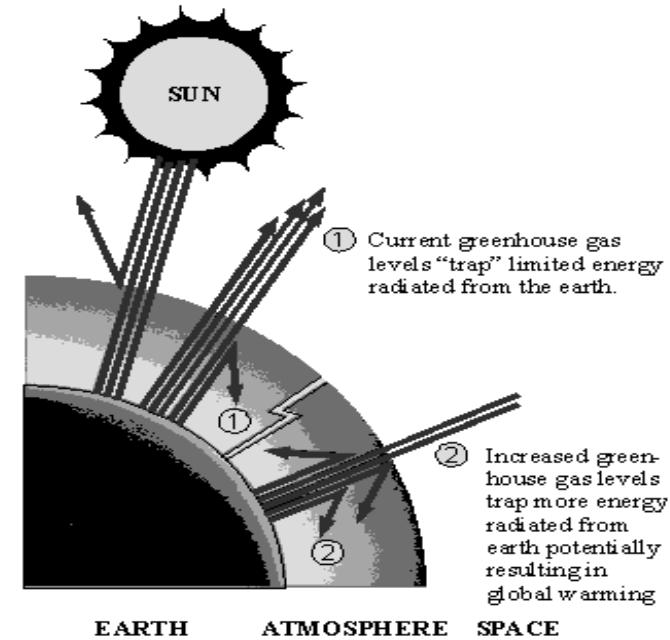
## Linear arrangements

Show cause and effect, where one step leads directly to another. Complex flow charts have 'branched structures' containing different pathways depending on responses to previous steps in the sequence. One cause or issue may have multiple effects, or one effect may have multiple causes.



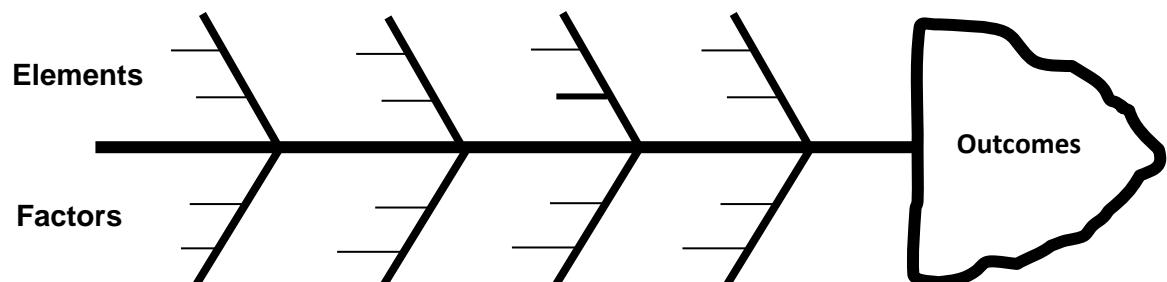
## Schematic diagrams

Schematic diagrams summarize complex issues and ideas



## Fishbone diagrams

Describe a question or a situation or a challenge in terms of the issues involved. Elements and factors are recorded either side of the central arrow. Relevant components within each of these are recorded on the finer lateral 'bones' of the fish. The overall outcome is recorded in the head of the fish.



# Imaging metaphorically

## Mental imaging

When people make connections, they formulate mental images, which are continually changing as experience unfolds and understandings develop. Mental images can be thought of as 'footprints' that symbolize experience and understanding. They may be expressed in combinations of verbal, textual, graphical and pictorial representations.

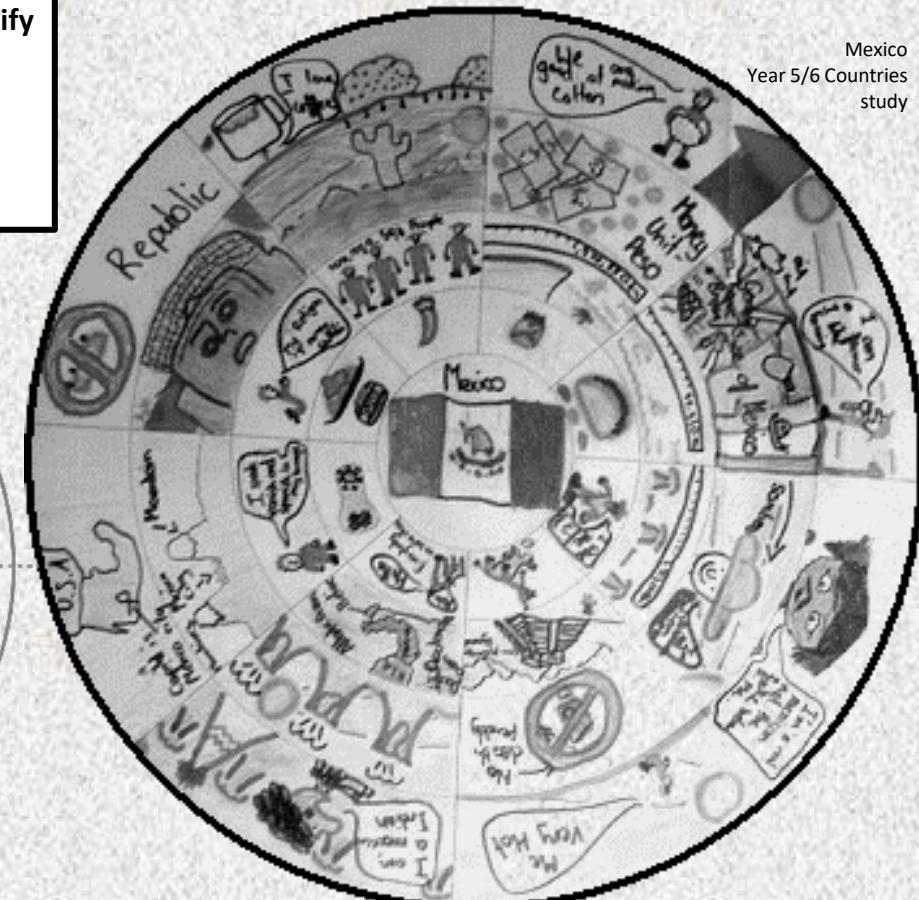
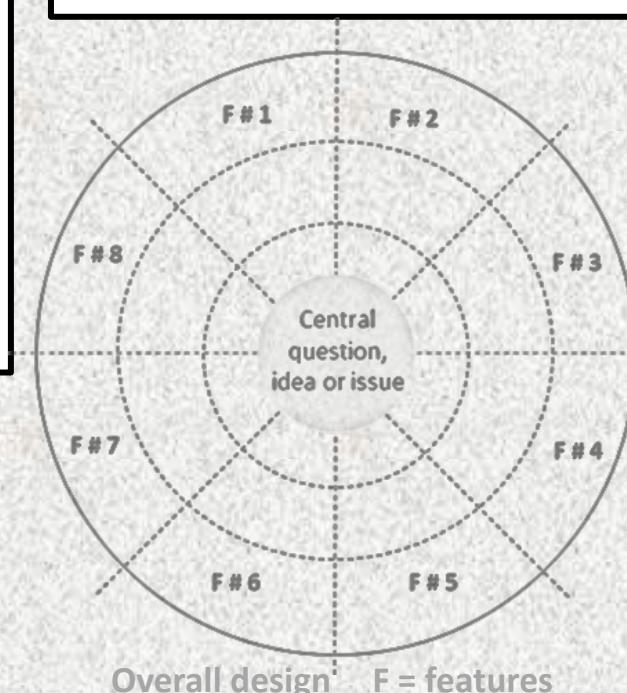
Avenues for thinking metaphorically include.

- Extensions that enhance understanding through expansion or substitution
- Similes that evoke resemblance through 'like' features
- Analogies that symbolise thoughts, situations or actions
- Metaphors that describe thoughts in terms of something they are not.

These processes fuel our imagination and creativity. Indeed, some people argue much human consciousness is formulated through metaphorical imaging.

## Mandalas

Mandalas have special value in helping to visualize aspects or outcomes from inquiries. They can be used to represent different features of questions, inquiries, experiences, concepts, values, cultures, propositions, or whatever. They may signify cognitive reasoning, feelings, emotions, empathy and ethical intention. Either expressed singly or more likely in combinations.



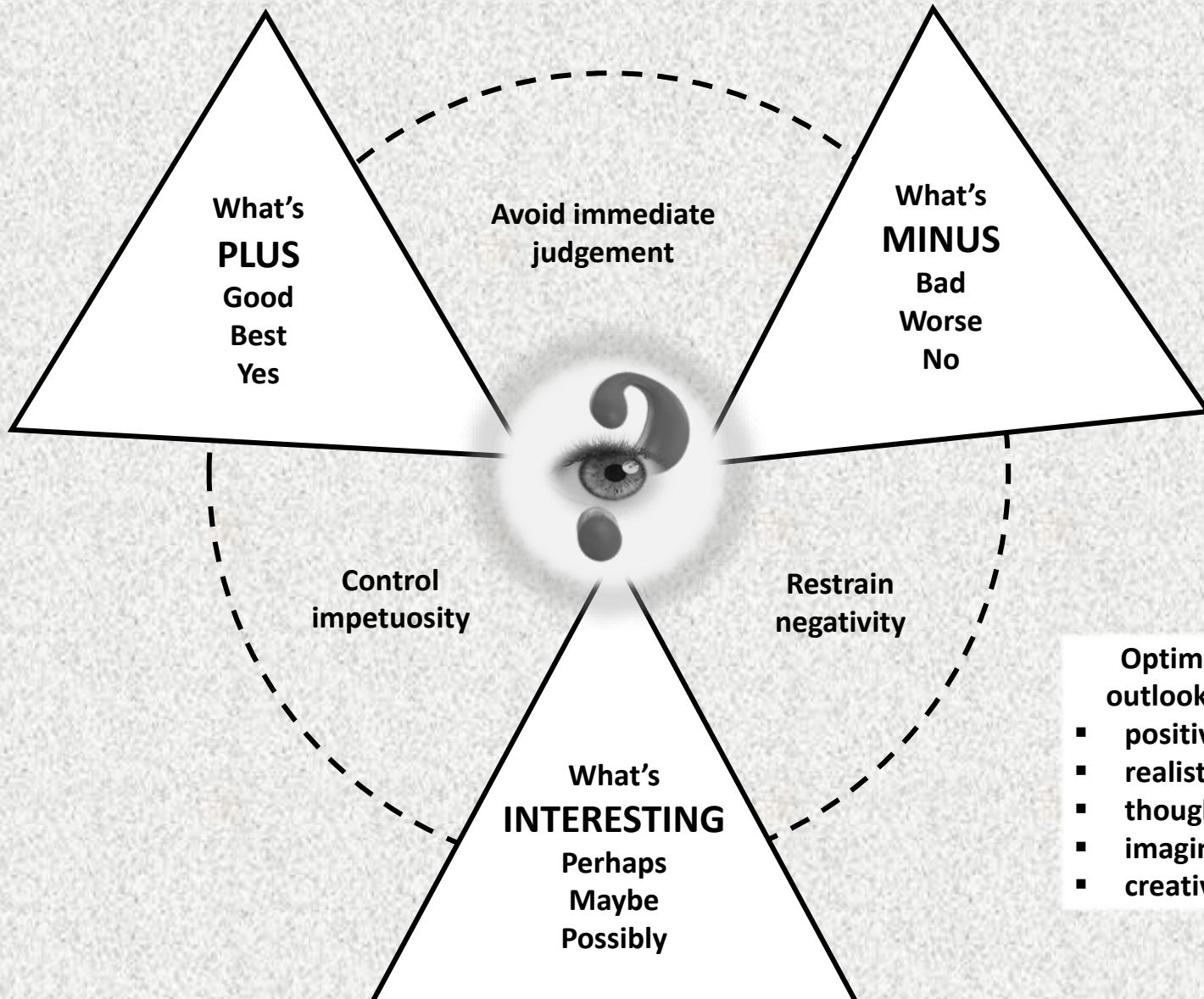
# Keeping possibilities open

Thinking is often based on a process of  
Yes-No-Judgement

Consequently, creativity tends to be quietened.



Alternatively, if the process is  
Yes-No-Possibly-Judgment  
creativity tends to be in full voice.



# Adjusting inquiry tactics

Inquiry strategies need to be shaped and adjusted to meet intentions and requirements.

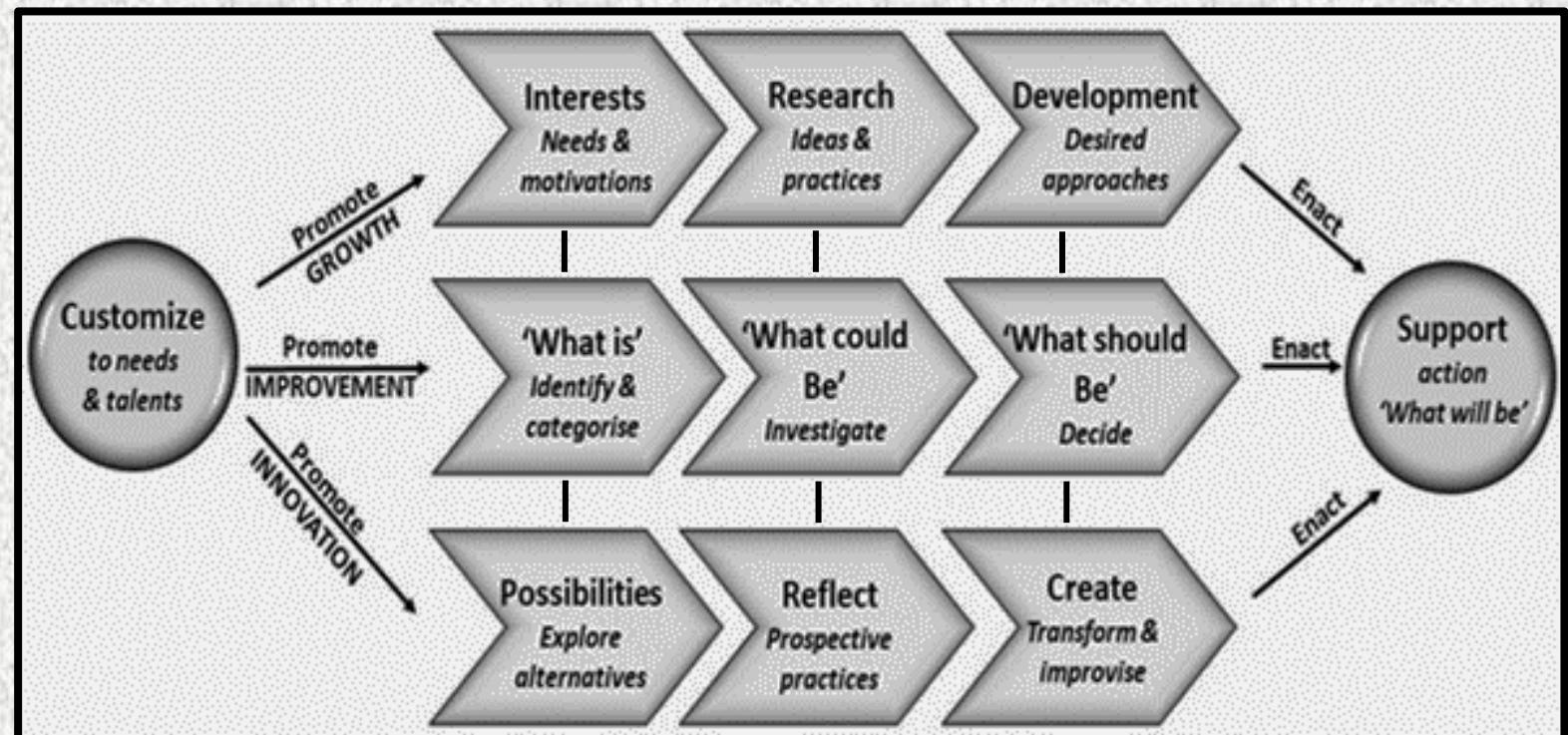
For instance, three different intentions are to promote-

- GROWTH
- IMPROVEMENT
- INNOVATION

The beginning strategies, the middle strategies and the culminating ones differ in response to each of these intentions.

Yet the generic process is similar for each of them.

Customize inquiries to intention and need



# Using action research

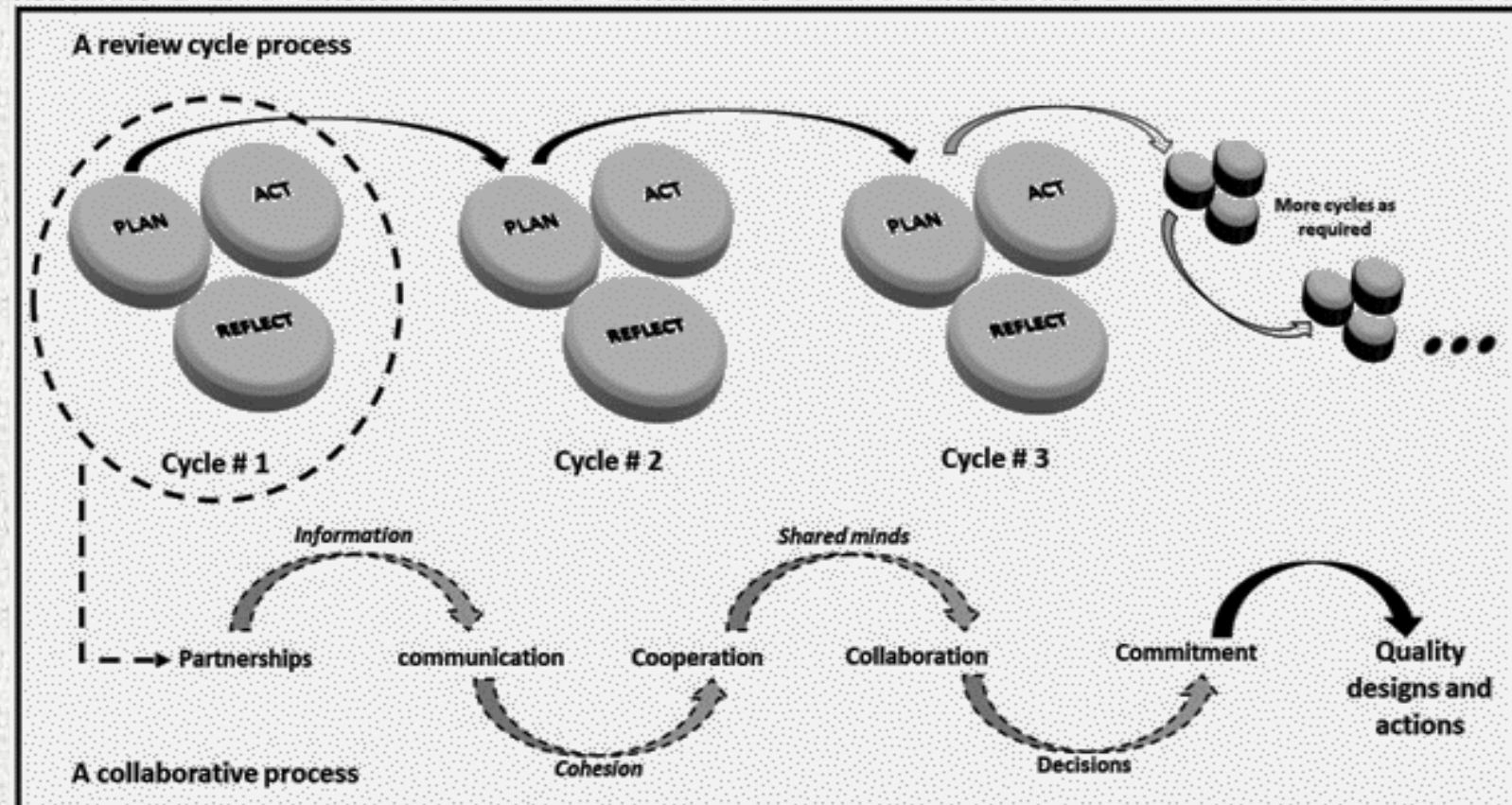
Action research has two interdependent dimensions.

1. A cyclical process of PLAN-REFLECT- ACT
2. A collaborative process of partnerships that shares information, ideas, minds, decisions and actions

The two processes are integral one to the other.

Action research is an ongoing process designed to improve ideas and practices

## Shared minds support quality action



# Working with artificial intelligence

## Balance potential benefits with risks

### Diversity of tools

Chatbots ([ChatGPT](#), [Claude](#), [Bing AI](#), [Zapier Central](#))

Content creation ([Jasper](#), [Copy.ai](#), [Anyword](#))

Grammar checkers and rewording tools

([Grammarly](#), [Wordtune](#), [ProWritingAid](#))

Video creation and editing ([Descript](#), [Wondershare Filmora](#), [Runway](#))

Image generation ([DALL·E 3](#), [Midjourney](#), [Stable Diffusion](#))

Voice and music generation ([Murf](#), [Splash Pro](#), [AIVA](#))

Knowledge management and AI grounding ([Mem](#), [Notion AI Q&A](#), [Personal AI](#))

Task and project management ([Asana](#), [Any.do](#), [BeeDone](#))

Transcription and meeting assistants ([Fireflies](#), [Airgram](#), [Krisp](#))

Scheduling ([Reclaim](#), [Clockwise](#), [Motion](#))

Email inbox management ([SaneBox](#), [Mailbutler](#), [EmailTree](#))

Slide decks and presentations ([Decktopus](#), [Beautiful.ai](#), [Slidesgo](#))

Automation ([Zapier](#))

[Other AI productivity tools](#)

### Caveats

- Awareness of value and limitations instructs wise use
- Intelligent systems , yes – intelligence , no
- Applications must be ethical and responsible
- Everyone has personal responsibility to use AI wisely
- Beware of misinformation and disinformation
- The artistry of teachers and learners is paramount

### Educational possibilities

- **Synthesize** ideas through access to information and practices from international data banks
- **Manage** personal and community information and ideas to enhance access and retrieval
- **Identify** innovative possibilities inspired by ideas and practices stored in international data banks
- **Analyze** patterns among issues and practices in own data and international data banks
- **Enhance** the presentation and production of text, sound, visual, and other multimedia material

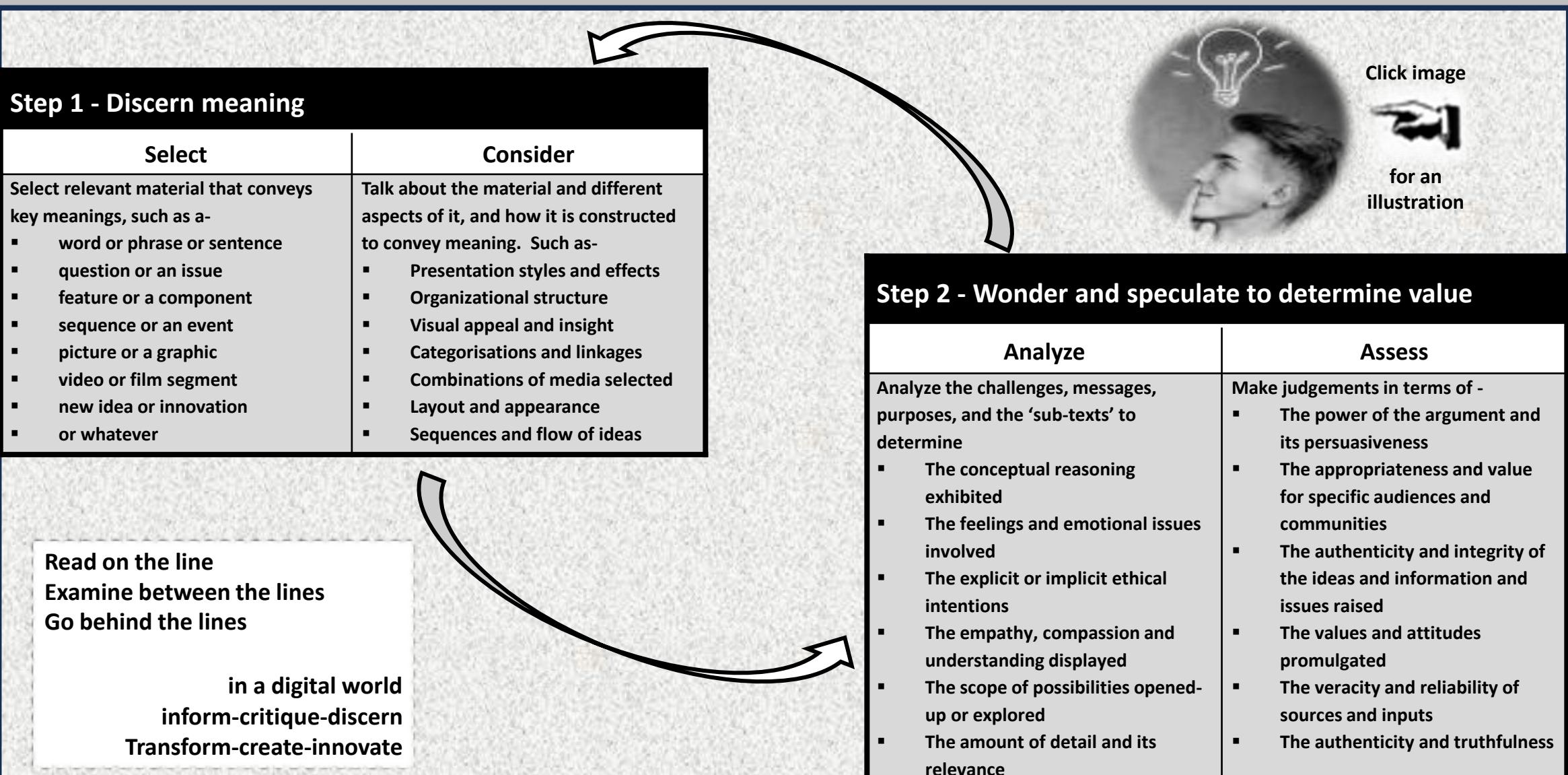


### Mind's eye potential

- **Incite active learning** - Encourage learners to explore, practice and struggle with timely feedback
- **Manage cognitive load** - Present relevant, well-structured information in multiple modalities
- **Adapt to learners** - Adjust to the goals and needs of learners by grounding inquiries in relevant materials
- **Support curiosity** - Inspire learners through purposeful inquiries that can access a wide range of digital tools
- **Deepen metacognition** - Plan, monitor and help learners reflect on progress as well as their future needs

# Being discerning

Discern, analyze, interpret, appraise and evaluate all forms of media and media sources



## Think-Pair-Share

Partners think privately about a question, issue, situation, or idea, and then discuss their responses with one another.

## Formulate-Share-Listen-Create

Work in pairs or groups of three over four sequential steps.

1. formulate questions or answers individually – 2. share your questions and answers with a partner – 3. Listen carefully to your partner's questions and answers - 4. Create new questions and answers through discussion.

## Say and Switch

Partners take turns responding to a question, a challenge or a topic at signaled intervals. The first partner responds while the second listens. At the signal, such as a defined period of time, roles switch, and the second partner responds while the first listens. When the switch occurs, the second partner has to continue or complete the first partner's line of thought before introducing new ideas.

## Roundtable

A piece of paper and a pencil is systematically passed around the group. One partner writes a question or an idea, and then passes the paper and pencil to the person next to him or her. The process continues until no more contributions are forthcoming. A variation is to have each partner use a different coloured writing tool, which visually encourages all participants to contribute and identifies their contributions.

## Round robin

Round robin is the oral form of Roundtable. Each participant verbally contributes a question or an idea to the group in a systematic, around-the group fashion. The conversation continues until contributions are exhausted.

## Plus-Minus-Interesting

The process of identifying – positive, negative and interesting – elements in an inquiry, which keeps possibilities open when exploring ideas and potential actions, and the efficacy or value of practices.

## Corners

Corners enables people to explore a particular aspect of a question or topic. First different dimensions of a question or topic are identified and posted in designated corners of the room. Then, each person chooses a particular dimension and moves to the appropriate corner. After extended discussion in their corner, pairs are selected from each corner to report their thinking to the whole group.

By having representatives from each corner present their viewpoints, varying perspectives and rationales emerge.

## Jigsaw

Jigsaw is designed to help participants within a group become expert on different aspects of a question or set of questions, or different dimensions of a topic or a group of related topics.

Step 1: Arrange cooperative groups and assign material - *Within each cooperative group, participants are assigned different material to learn and present to one another.*

Step 2: Form expert groups and prepare presentations - *Expert groups are formed by pairing learners from different groups who have been assigned the same material. The material is then discussed in detail to develop knowledge and understanding of questions, issues, ideas and practices embedded in it.*

Step 3: Teach original cooperative group to become expert - *Individuals return to their original cooperative group. They present their 'discovered' thoughts. The intention is for all group members to develop an understanding of the material presented*

Step 4: Demonstrate understanding - *Having become 'expert' individuals may now demonstrate their understanding by applying it to the inquiry questions being addressed.*

## Action Research

Engage in an evolving series of – plan/act/review – cycles by engaging in processes that share information, analyze ideas and practices, and make decisions about extant and future actions.

## Appreciative Inquiry

An iterative process of 'What is' – 'What could be' - 'What should be' - 'What will be' – which respects extant practice and builds on participants ideas, suggestions, and their situated expertise.

## Strengths, weaknesses, opportunities, threats (SWOT)

Strengths, Weaknesses, Opportunities and Threats is a useful process for summarizing and/or analysing situations or prospective courses of action, especially where realistic appraisal is required.

## Personal journals

Introspection and 'talking to myself' often provides the safety and quiet time needed to absorb cooperative experiences as well as contemplate new ideas including their implications and possibilities.

Dear Sir/Madam

I am writing to present to you a request for a large sum of money. The Bhopal (India) disaster of 1984 is said to be the worst ever industrial disaster. It was caused by the accidental release of forty metric tons of Methyl Isocyanate from a pesticide plant six kilometres from the heart of Bhopal city, in the State of Madhya Pradesh. As a result, 2000 people have died. Twenty years later the residents of Bhopal are still seeing results of this tragedy

Although Tasmania is only asking for a small amount of money - \$50 000 - I strongly believe that a radio station would not fix their problem. Like someone taking a painkiller for their headache instead of finding what caused the headache and fixing it. You would have to find the source of the problem, which in this case is presumed by many to be boredom. But supposing it's not, then a radio station that's supposed to help teenage crime would make no difference at all. The teenage crime could be caused by a whole range of things other than boredom - such as family issues.

If you were to give us the money, we are planning to give people enough money to pay for as much medicine as is necessary for their specific needs. The amount you might be giving us will not go straight to the patients. We have to buy the medicines, pay to get them over there and pay the doctors. And when that is under control all the excess money will go into a major clean-up project for all the thousands of metric tons of toxic chemicals, including benzene hexachloride and mercury, held in open containers or loose on the ground. After rainfall these chemicals leach into the ground passing into local dams and water wells. A BBC test has shown that the ground water is 500 times more contaminated than the legal limit.

Although it might be true that not all Australians have everything they could need, they have clean air and water. In contrast, Bhopal in India has such dangerously toxic air and water that there is a very high chance of getting potentially life-threatening diseases.

We want to provide medical support to these people. After all this death and destruction, the amount of poisonous gas contained within supposedly air-tight tanks is extremely large. But the tanks are not stable and at anytime they could leak, bringing back the terrible tragedy that occurred twenty years ago. We can't stand by and let this happen. We must respond to this urgent cause and play a crucial role in saving lives.

Thank you for taking time to consider our large ask.

Yours sincerely

# Glossary

Terms	Meaning
Abbreviations  GGQ Generic generative question  CQ Consequent question  PQ Pointed question	<b>Ambition</b> A strong desire to do or achieve something of value <b>Artefact</b> An object or system that has contextual and/or cultural significance <b>Aspiration</b> A goal or objective that is strongly desired <b>Belief</b> An opinion or custom or practice considered acceptable and/or true <b>Community</b> A group of people living in the same place and/or having shared characteristics <b>Concatenate</b> A grouping or an association that has functional value in understanding experience <b>Cultural</b> A collection of behaviors and beliefs associated with excellence in artistic, social and societal activities <b>Dialogue</b> An exchange of ideas, opinions and ways of acting between two or more people <b>Empathy</b> An ability to understand and appreciate another person's feeling from their perspective <b>Equity</b> A principle that seeks fair access, opportunity and advancement for everyone <b>Heritage</b> A combination of historical and contemporary traditions, objects, behaviours and activities <b>Identity</b> A condition of being oneself or itself, and not another <b>Interaction</b> A process of communication with a person or a group, or direct involvement with an environment <b>Literature</b> A body writing or multimedia presentations that have contextual, conceptual and artistic value <b>Media</b> A means of mass communication which may inform, entertain, educate, persuade, unite or divide <b>Modality</b> A way or a means in which something exists or is done <b>Mode</b> A way something occurs or is experienced and expressed, <b>Multiple intelligence</b> A group of qualities that encompass the different ways people think and explore experience <b>Responsibility</b> A state of being answerable or accountable for something within one's power, control, or management <b>Rights</b> A set of freedoms that are protected and enshrined in the rule of law <b>Talent</b> A natural skill or aptitude to be good at something without necessarily requiring instruction <b>Technological</b> A system or a process designed to meet specific needs and purposes in particular contexts <b>Tradition</b> A belief or behaviour or custom that endures and is transmitted from one generation to another <b>Values</b> A set of principles and practices that guide individual and collective thoughts and actions
Definition  <i>Culture</i> refers to the ways of life a person or a community has developed over time.	
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