

*“Learning is the consequence of thinking.”
(Perkins 1992)*

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Bibliography: Resources for the Thinking Capability

Thinking Skills Organiser

Domain	Examples
Collaborative Thinking	Cooperative Learning Visible Thinking Routines
Critical Thinking	Blooms Taxonomy CoRT Thinking Questioning Skills Six Hat Thinking Thinkers Keys Original Thinkers Keys Revised Visible Thinking Routines Web 2.0 Tools
Creative Thinking	Concept Development Creative Thinking Williams 8 Creative Thinking Williams 18 Questivities™ Thinkers Keys Original Thinkers Keys Revised Visible Thinking Routines Web 2.0 Tools
Dispositional Thinking	Habits of Mind Mindsets Multiple Intelligences
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Visual Thinking	Graphic Organisers

Bloom's Taxonomy

- Remembering
- Understanding
- Applying
- Analysing
- Synthesising
- Evaluating

Bloom's Taxonomy (Revised)

- Remembering
- Understanding
- Applying
- Analysing
- Evaluating
- Creating

(Pohl 1997)

CoRT Thinking

- PMI (*Plus Minus, Interesting*)
- Planning
- CAF (*Consider All Factors*)
- FIP (*First Important Priorities*)
- Rules
- APC (*Alternatives, Possibilities, Choices*)
- C & S (*Consequences and Sequel*)
- Decisions
- AGO (*Aims, Goals, Objectives*)
- OPV (*Other People's Point of View*)

(de Bono, 2014)

Cooperative Learning

- Jigsaw
- Think, Pair, Share (Visible Thinking Routine)

(Howard 2013: 140)

Concept Development

- Appendix 1

Creative Thinking Skills and Attitudes (Williams 8)

- Fluency - measured by number of responses to a theme
- Flexibility - measured by the variety or changes or categories
- Originality - measured by degree of unusual or uncommon responses
- Elaboration - embellishment or expansion of the idea
- Risk-taking - willingness to try different or difficult things
- Curiosity - ability to seek many alternatives, depth of study
- Complexity - capacity to explore or discover

Imagination - power to visualise, dream or conceive forms of action
symbolically

(Forte & Schurr 2006)

Graphic Organisers

Attribute Web
Fishbone (*Cause and Effect*)
Flow Diagram
Mind Map
Venn Diagram (*Comparison*)

(Forte and Schurr, 1997)

Guided Inquiry

Initiation
Selection
Exploration
Formulation
Collection
Presentation
Assessment

(Kuhlthau, C & Todd,)

Habits of Mind

Persisting
Managing impulsivity
Listening with empathy and understanding
Thinking flexibly
Thinking about your thinking
Striving for accuracy
Questioning and posing problems
Applying past knowledge to new situations
Thinking and communicating with clarity and precision
Gathering data through all senses
Creating, imagining and innovating
Responding with wonderment and awe
Taking responsible risks
Finding humour

Thinking interdependently

Remaining open to continuous learning

(Costa and Kallick, 2004)

Metacognition

Planning

Monitoring

Evaluating

Adjusting

(Farrall 2014)

Mindsets

(Centre of Confidence and Well-being)

Multiple Intelligences

Linguistic Intelligence (*Word smart*)

Logical-mathematical Intelligence (*number/reasoning smart*)

Spatial Intelligence (*picture smart*)

Bodily-Kinesthetic Intelligence (*body smart*)

Musical Intelligence (*music smart*)

Interpersonal Intelligence (*people smart*)

Intrapersonal Intelligence (*self smart*)

Naturalist Intelligence (*nature smart*)

(Pohl 2000)

Questioning Skills

Guided Peer Questioning

(Walsh & Sattes 2005)

Question Stems

(Walsh and Sattes 2005)

Self-Questioning Techniques for Students

(Wilson and Wing Jan 1993)

Socratic Questions

(Socratic Questions)

Questivities™

1. List all,,,,,,,,,
2. Compare/contrast
3. What would happen if.....?
4. Would you rather.....?
5. How would you feel if.....?
6. Why?
7. How?

8. What?

Active Questioning

(Coil 2004)

Reflective Thinking

321 RIQ

(Howard 2013)

Mrs Potters Questions

(Fogarty 1994)

Mrs Farralls Questions

(Farrall 2014)

Six Hat Review

(Farrall 2014)

Ten Sentence Starters

(Murdoch 2009)

Six Hat ThinkingWhite Hat (*information*)Yellow hat (*strengths*)Black Hat (*weaknesses*)Red Hat (*feelings*)Green Hat (*new ideas*)Blue Hat (*thinking about thinking*)

(de Bono 1992)

Thinkers Keys (Original)

Alphabet

Alternative

BAR

Brick Wall

Brainstorming

Combination

Commonality

Construction

Different Uses

Disadvantages Key

Forced Relationships

Interpretation

Inventions

Picture

Prediction

Question

Reverse

Ridiculous

Variations

What if?

(Pohl 1997)

Thinkers Keys Revised: Critical and Creative

Critical/Organisational

- Perspectives
- Purpose
- Decisions
- Question
- Three Whys
- Info
- Rubrics
- Action
- Consequences
- Reflection

Creative/Innovative

- Improvements
- Brainstorming
- Predictions
- In Common
- Combination
- BAR
- Inventions
- Brick Wall
- Challenge
- Reverse

(Ryan, 2013)

Visible Thinking Routines

Compass Points

I Used To Think...But Now I Think

See, Think, Wonder

Step Inside

Think, Pair, Share

Word, Phrase, Sentence

(Visible Thinking Routines)

Web 2.0 Tools

There are a variety of websites available that demonstrate Web 2.0 Tools.

Williams Model (18)

Paradox

Attribute Listing

Analogy

Discrepancy

Provocative Question

Example of Change

Examples of Habit

Organised Random Search

Skills of Search

Tolerance for Ambiguity

Intuitive expression

Adjustment to Development

Study Creative process

Evaluate Situations

Creative Readings Skills

Creative Listening Skills

Creative Writing Skills

Visualisation

(Gross 1999)

Vocabulary Instruction Model

1. Provide a description, explanation, or example of the new term. (Include a non-linguistic representation of the term for ESL kids.)
2. Ask students to restate the description, explanation, or example in their own words.
3. Ask students to construct a picture, symbol, or graphic representing the word.
4. Engage students periodically in activities that help them add to their knowledge of the terms in their notebooks.
5. Periodically ask students to discuss the terms with one another.
6. Involve students periodically in games that allow them to play with terms. (Marzano 2013)

APPENDIX 1: CONCEPT DEVELOPMENT: *CREATIVITY*

Quote: "To live a creative life, we must lose our fear of being wrong."

Joseph Chilton Pearce

Definition

Concept Development encourages participants to explore and clarify their understandings of concepts.

Purpose

Using critical and creative thinking skills, and employing a range of learning modalities, participants will explore the concept of *Creativity* through a series of guided thinking tasks

Process:

1. Divide workshop participants into groups of 4, and issue cartridge paper and textas. Ask groups to select a leader, a recorder, a reporter and an encourager.
2. Have groups fold the paper in half (portrait), number the pages (1-4) and write their names at the bottom of p. 1
3. On page 1, ask participants to work together to create a diagram that represents *Creativity*. (Visual Thinking)
4. On page 2, ask participants to generate 20 things that they associate with *Creativity*. (Creative Thinking) To prepare for this, have participants write the numbers 1-20 down the Left-hand margin, so that the whole page is filled up.
5. On page 3, ask participants to list 20 things that they do not associate with *Creativity*. As for Step 2.
6. In the top half of page 4, ask participants to write the following sentence:

CREATIVITY is like and animal (of their choice)

because

a,

b.

c.

(Creative Thinking: Forced relationships)

7. In the bottom half of page 4, ask students to complete the following:

CREATIVITY is _____

(Critical Thinking: Defining)

8. Reporting back: Have each group show and explain their diagram on page 1, their analogies on page 4 and their definition of Creativity on page 4. Insist that each group is applauded. Work can be published during the workshop, so that everyone has a chance to

read pages 2 and 3. A further activity could be refining all the definitions into one definition or developing a set of generalisations about the concept

Metacognitive Moment: How creative do you consider yourself to be?

References: This activity is based on *Attribute Web Analysis* (Robin Fogarty: 1996) and *Concept Development* (Professor Joyce Van Tassel-Baska 1999)

J. E. Farrall, AISSA 2014

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