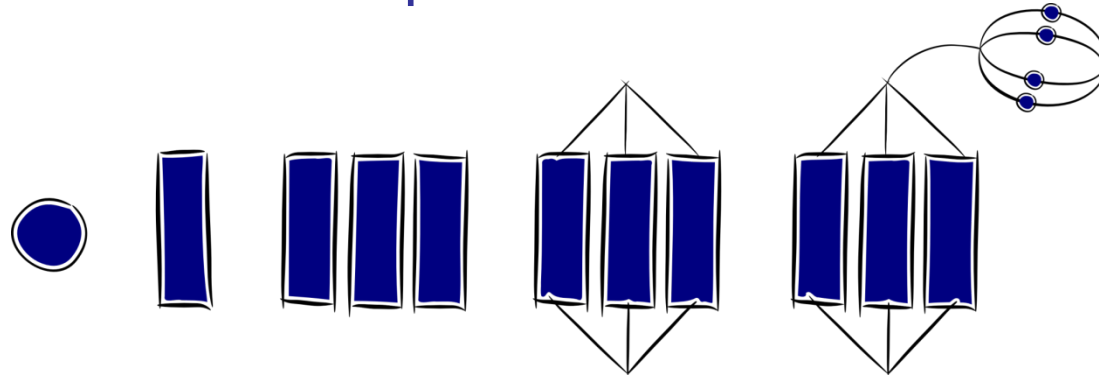


SOLO Taxonomy and Thinking Skills

Matching Thinking Strategies with Learning Outcomes in SOLO Taxonomy

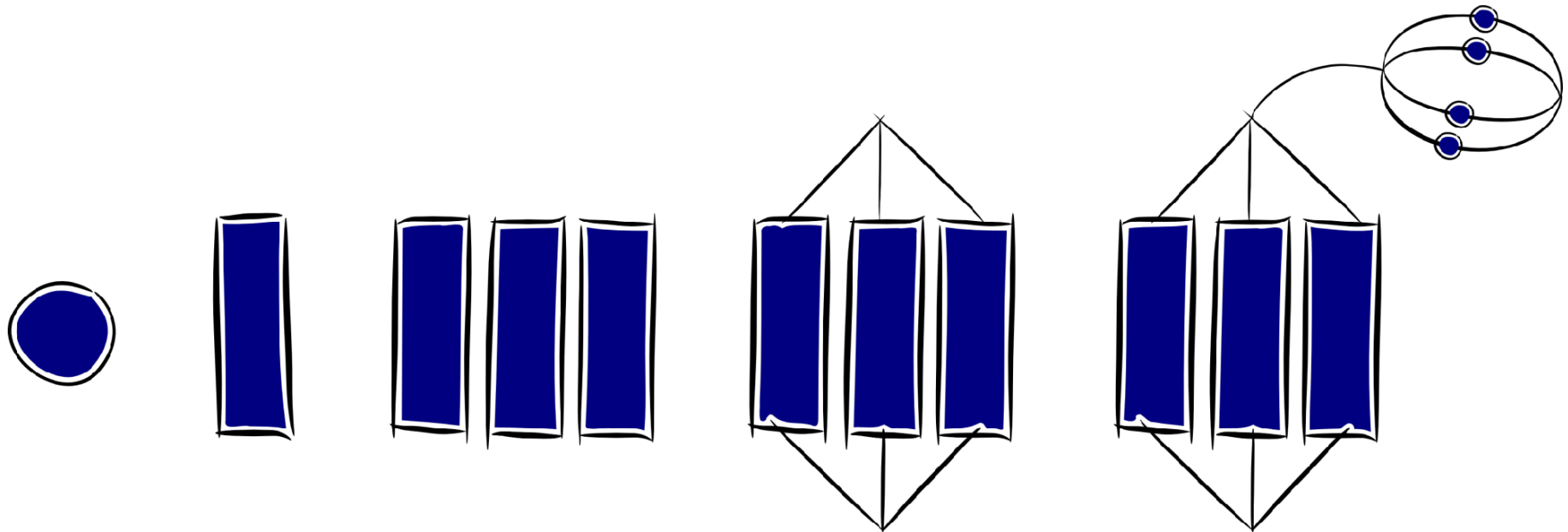
Pam Hook

www.pamhook.com

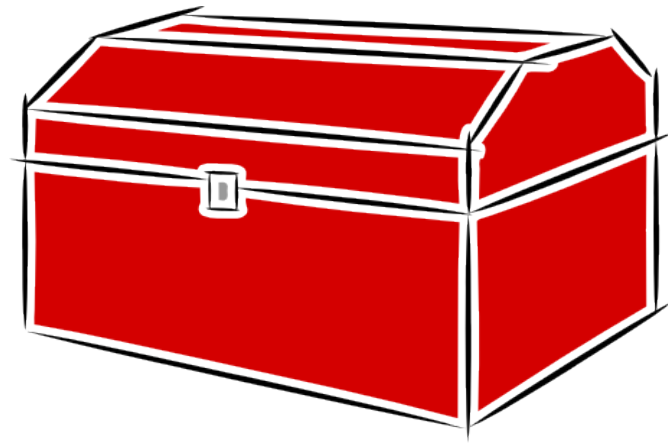


SOLO Taxonomy - Biggs and Collis 1982

The Structure of Observed Learning Outcomes



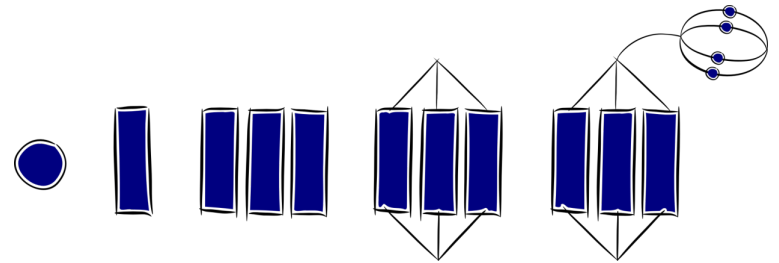
Classifying Thinking



“Thinking Toolbox” Focus

Skills and dispositions for the
“knowing” of thinking.

(All that focus on critical, creative, caring stuff)



“Learning Outcomes” Focus

Skills and dispositions for the
“understanding” of learning.
(All that focus on learning outcomes stuff)



“To teach for understanding, we must create learning environments where thinking can be analysed and improved, and where pedagogies for reflection, pattern recognition, and connection, are encouraged.”



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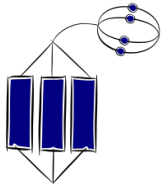
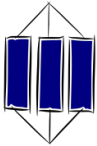



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Classifying thinking interventions against learning outcomes in SOLO Taxonomy creates just such a learning environment.

Go to the Download Centre for templates and examples	Unistructural	Multistructural	Relational	Extended Abstract
	I	III		
SOLO		Describe Define Identify	Parts/Whole Compare & Contrast Classify Sequence Cause/Effect Analogy Mind Maps	Generate Evaluate Predict
Hooked on Thinking (HOT) Maps			Open Compare & Contrast Focused Compare & Contrast	
Other Thinking Tools and Maps		Flowcharts	Yellow Hat Black Hat	Blue Hat Green Hat
De Bono's Hats		White Hat Red Hat		C&E (Consequences & Impact) AOC (Aims, Goal, Objectives) APC (Alternatives, Possibilities, Choices)
DATT		CAF (Consider all Factors)	PFI (Plus, Minus, Interesting) OPV (Other People's Views) FIP (First Important Questions)	
Metacognition			Mrs Foster's Questions Exam Analysis Metacognition Self-Assessment Assessment Reflection assessment Reflection Student Self-Assessment	Team Self-Check
Curriculum & Learning Based Thinking				
(Where these tools fit depends on the type of questions asked)				
Tools for Gathering Information		Information Analysis (Data Chart)		
The Question Matrix		Who/What/Where/When	How/Why	Predict
Questioning Strategies			Compare/Contrast Classify Sort Distinguish	Evaluate Generate Imagine Judge
	Complete/ Count/ Define/ Describe/ Identify/ List/ Match/ Name/			

As does co-constructing assessment rubrics for outcomes when using different thinking interventions

“So just what is a
shallow learning
outcome when using a
PMI? – and what is a
deep learning
outcome?”

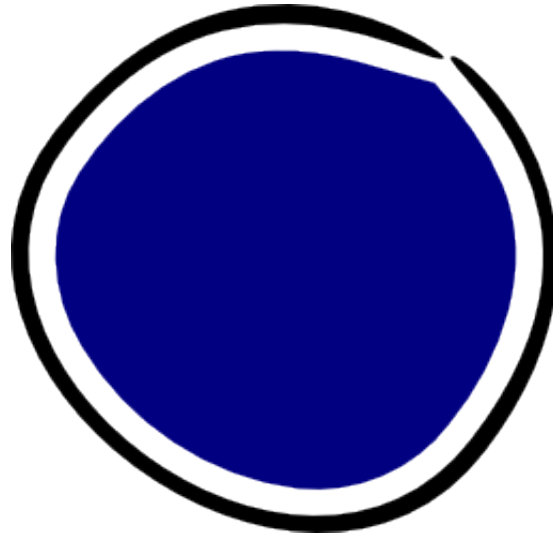
		
		
		
		
		



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SOLO PRESTRUCTURAL:

Learning outcomes show unconnected information, no organisation.



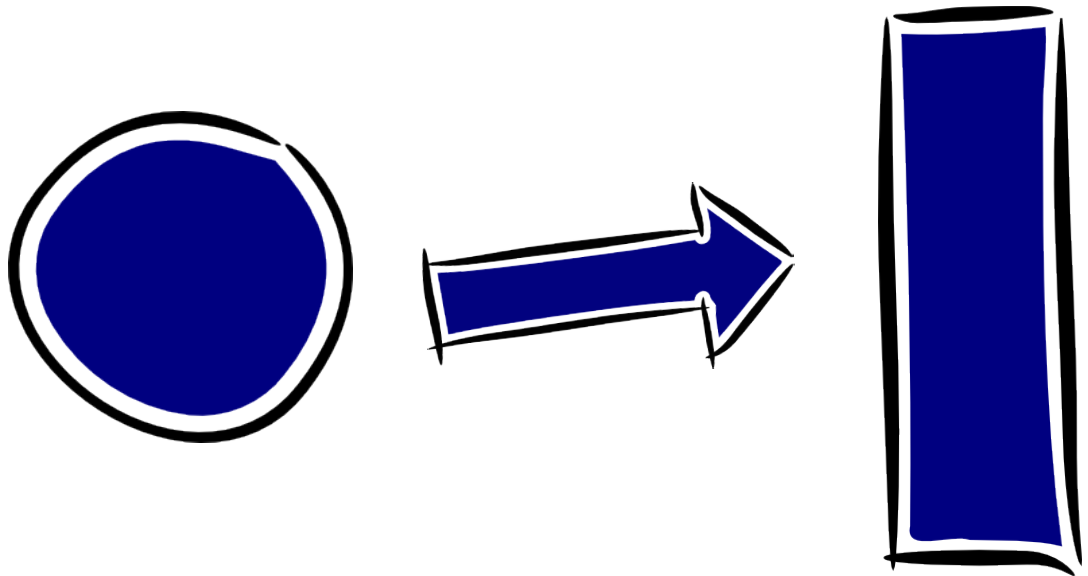
“I need help to ...”



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Where to next ...

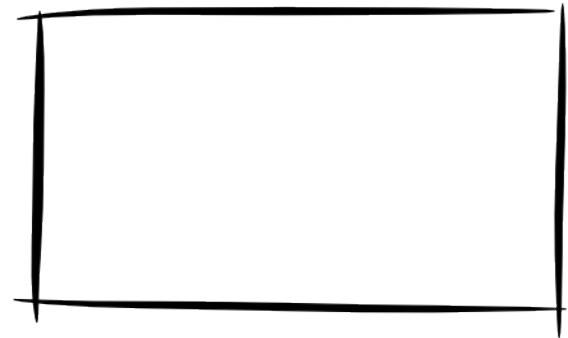
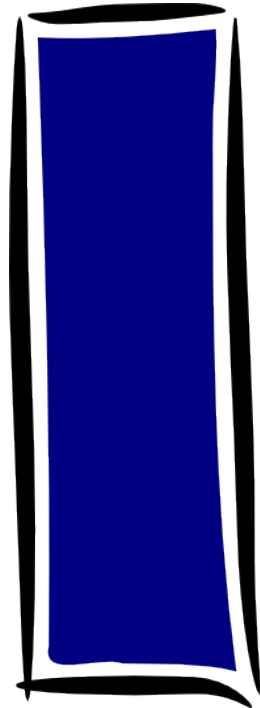


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SOLO UNISTRUCTURAL:

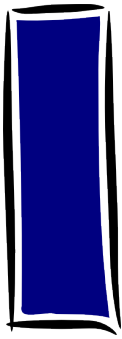
Learning outcomes show simple connections but importance not noted.



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"I have one relevant idea about ..."



What thinking interventions would enhance the conditions of value for unistructural learning outcomes?

Target
Map

de Bono Red Hat

Y Chart

Matching items

5W's

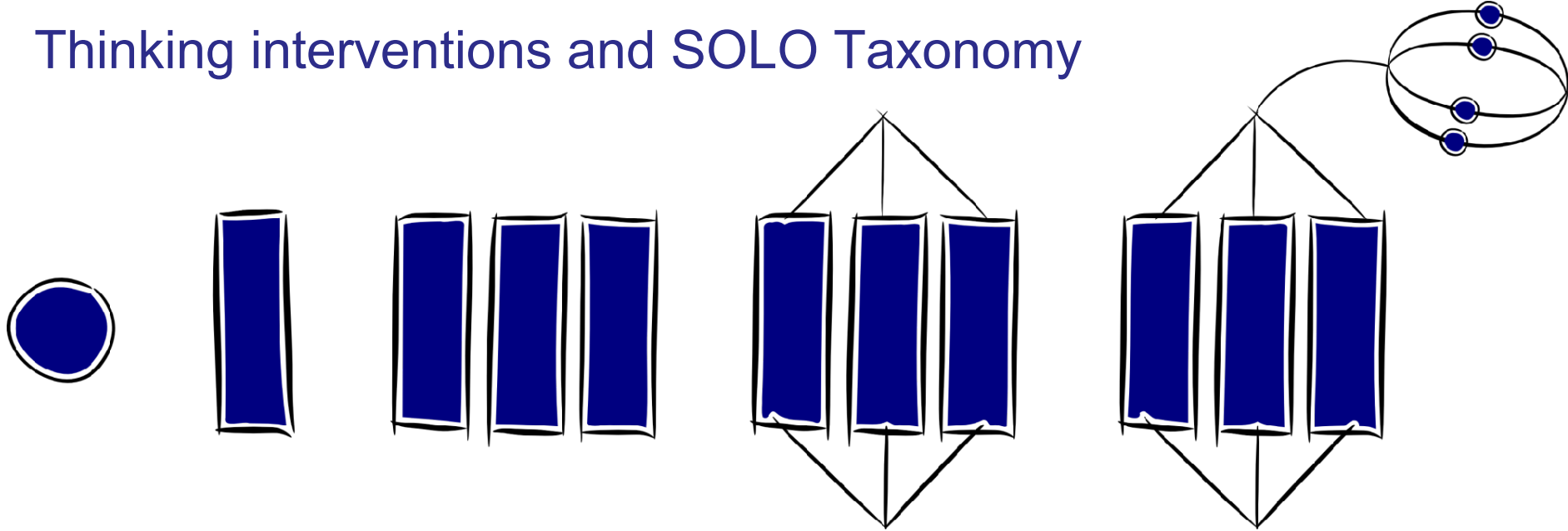
and



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Thinking interventions and SOLO Taxonomy



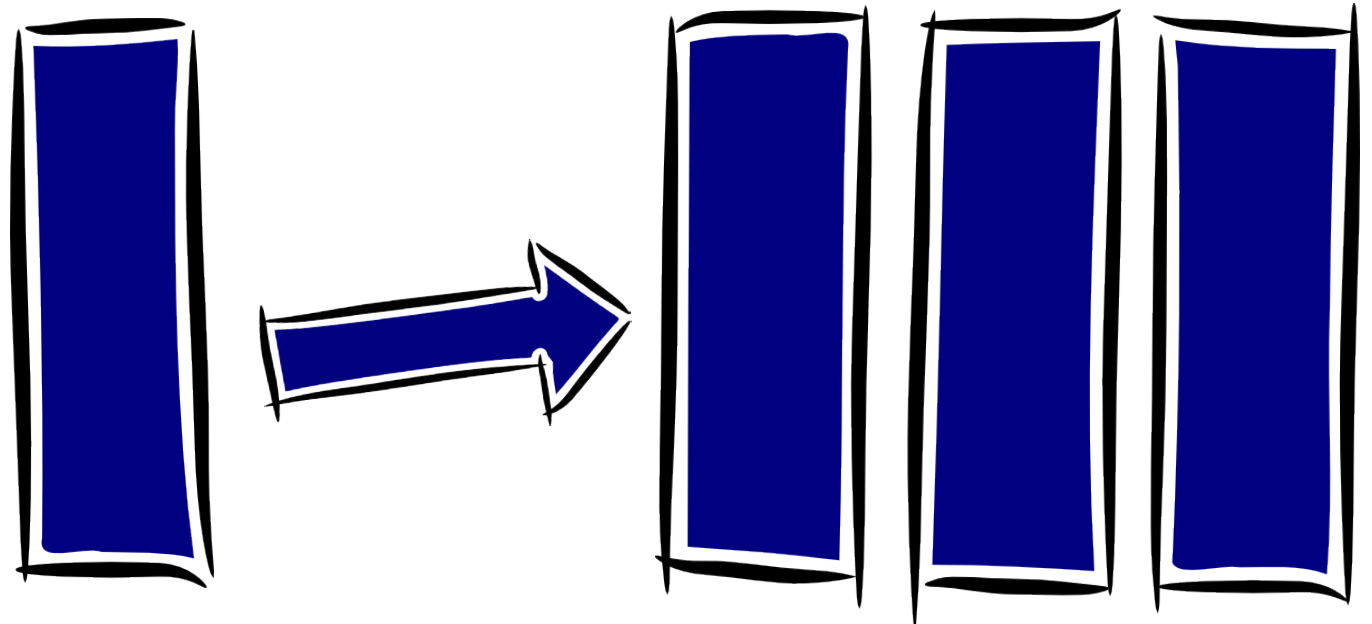
de Bono Red Hat
Target Map
Matching items
5W's
Y Chart
...



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Where to next ...

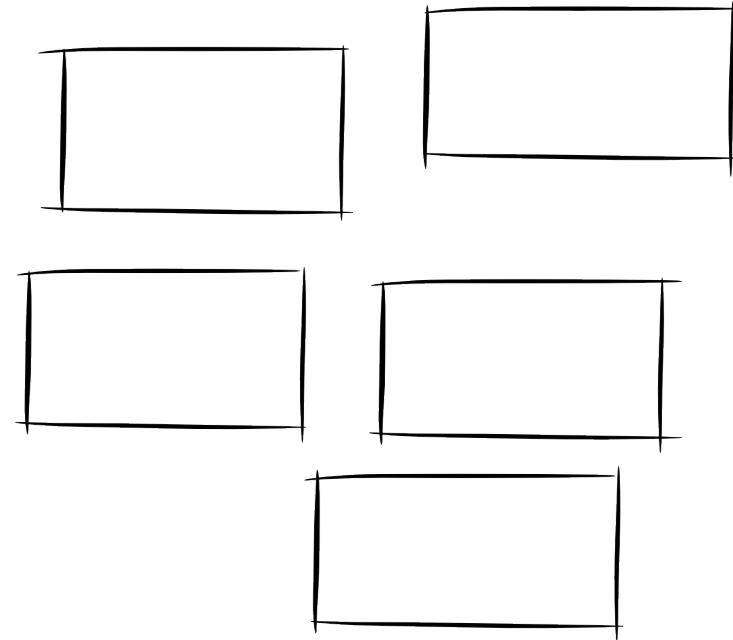
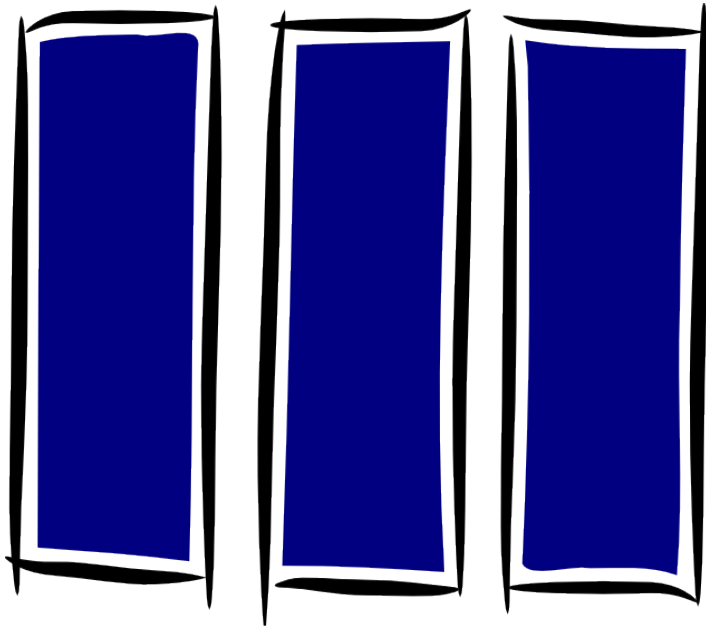


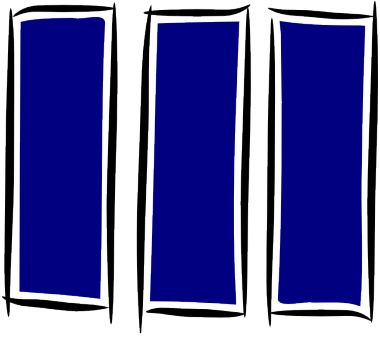
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SOLO MULTISTRUCTURAL:

Learning outcomes show connections are made, but significance to overall meaning is missing.





What thinking interventions would enhance the conditions of value for multistructural learning outcomes?

de Bono CAF

Circle Maps

de Bono White Hat

See Think Wonder

Spider Diagrams

Alphabet Key

Picture Key

Brainstorming

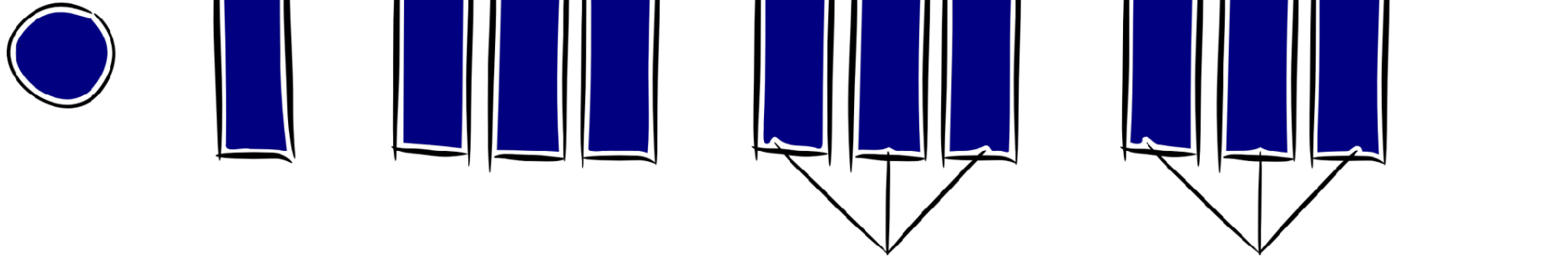
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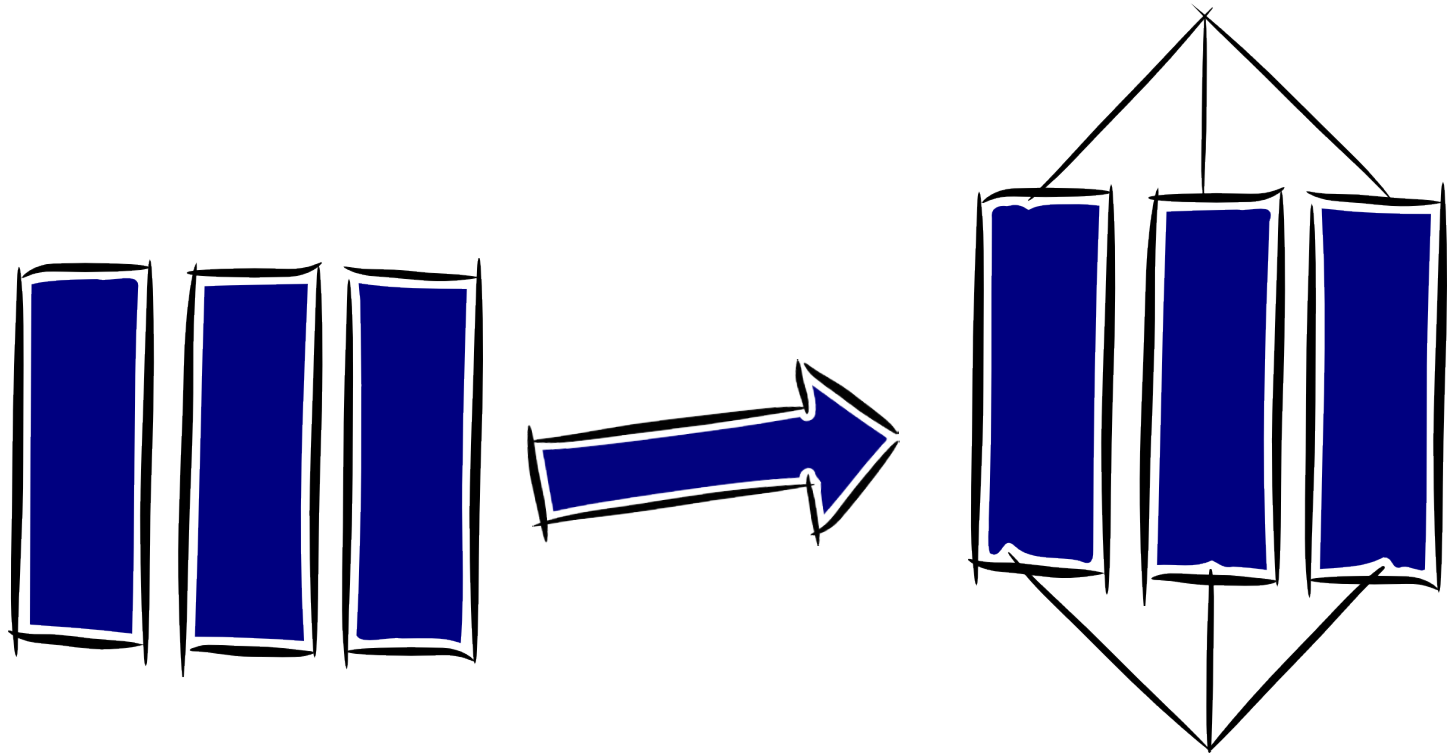
Thinking interventions and SOLO Taxonomy



e.g.
de Bono Red Hat
Target Map
Matching items
5W's

e.g.
de Bono White Hat
Circle Maps
Spider Diagrams
de Bono CAF
Brainstorming
Alphabet Key
Picture Key
See Think Wonder

Where to next ...

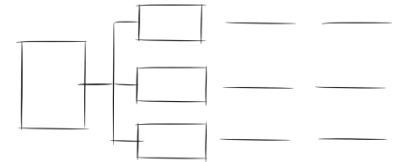
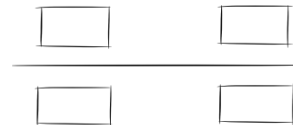
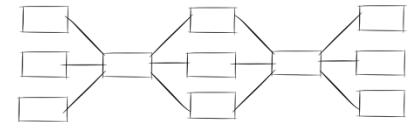
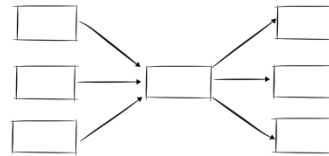
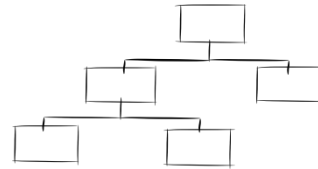
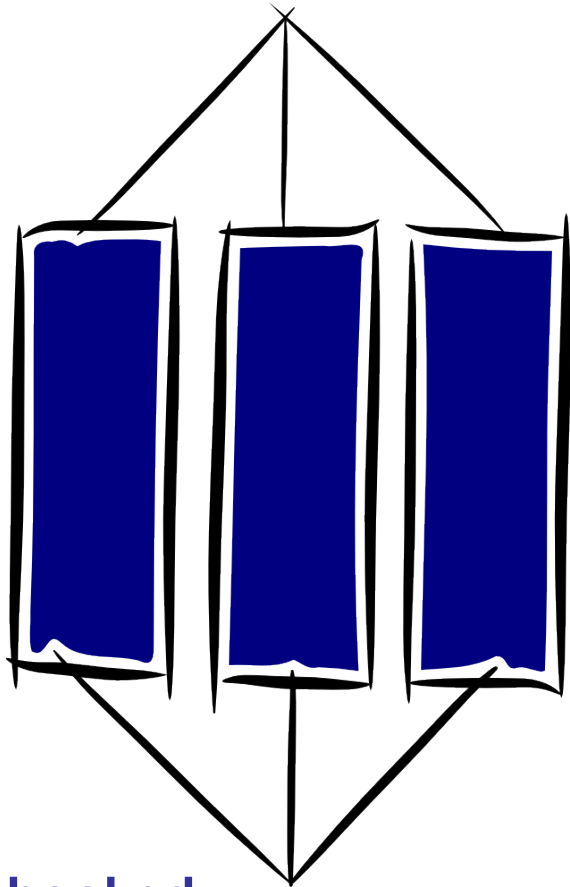


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SOLO RELATIONAL:

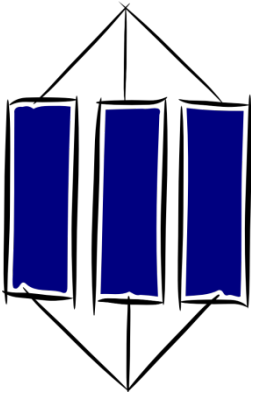
Learning outcomes show full connections made, and synthesis of parts to the overall meaning



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“I have several ideas about ...and can link these ideas to the whole.”



What thinking interventions would enhance the conditions of value for relational learning outcomes?

Story Board

de Bono Black Hat

Venn Diagram

SWOT Analysis

de Bono Yellow Hat

GANTT Charts

de Bono PMI

See Think Wonder

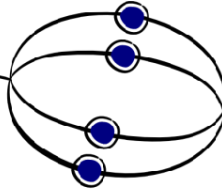
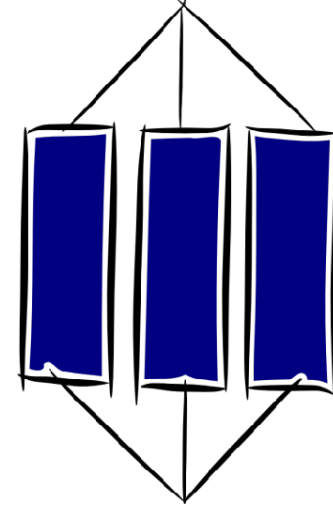
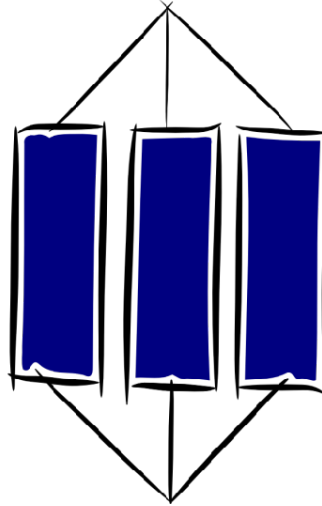
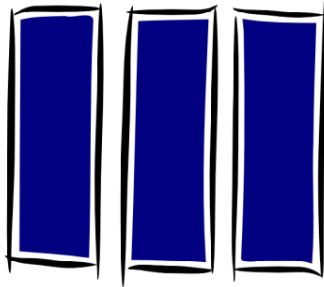
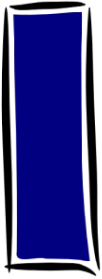
Continuum Lines

Ryan's Disadvantages Key

Ryan's Commonality Key

and

Thinking interventions and SOLO Taxonomy



e.g.
de Bono Red Hat
Target Map
Matching items
5W's

e.g.
de Bono White Hat
Circle Maps
Spider Diagrams
de Bono CAF
Brainstorming
Alphabet Key
Picture Key
See Think Wonder

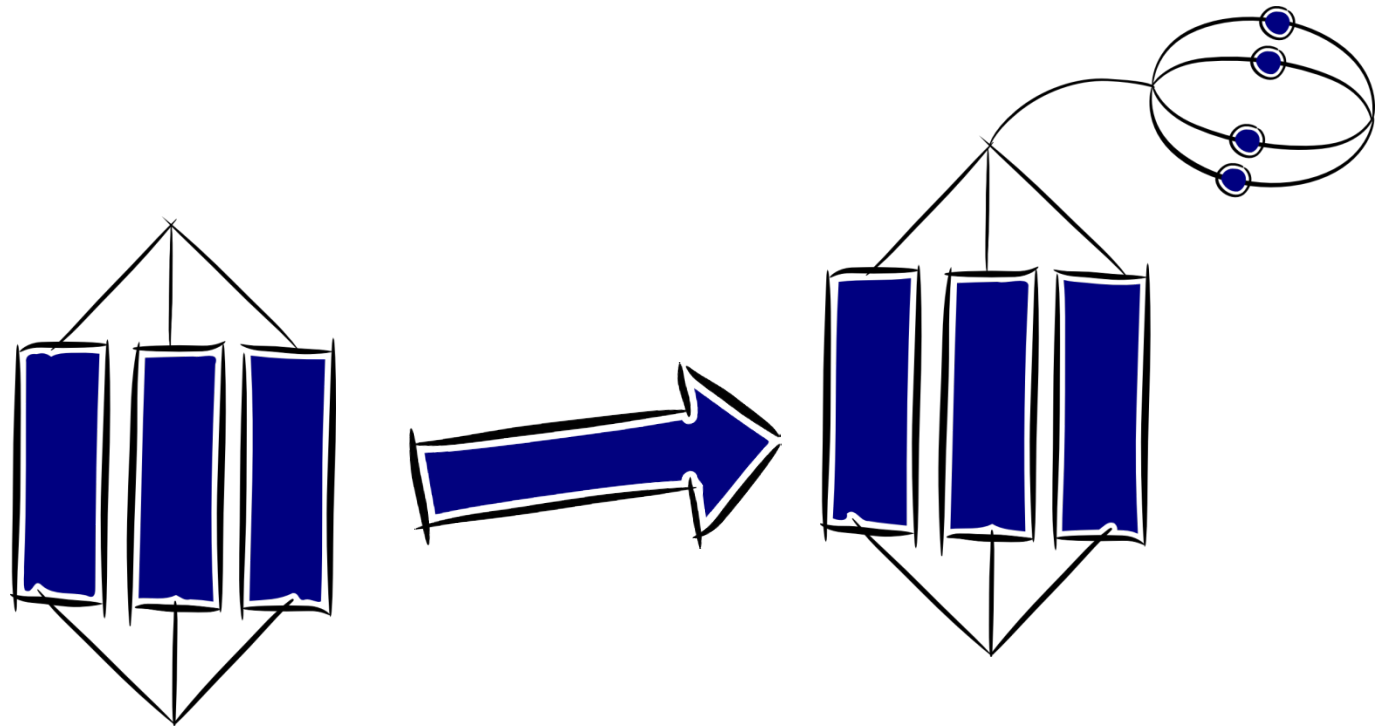
e.g.
de Bono Yellow Hat
de Bono Black Hat
Venn Diagram
SWOT Analysis
de Bono PMI
See Think Wonder
Continuum Lines
Story Board
GANTT Charts
Disadvantages Key
Commonality Key



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Where to next:

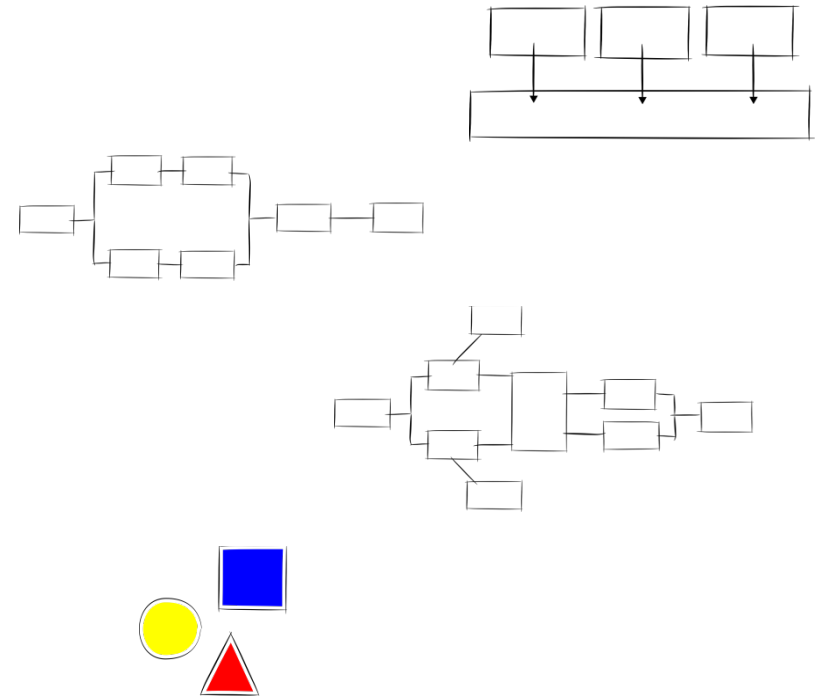
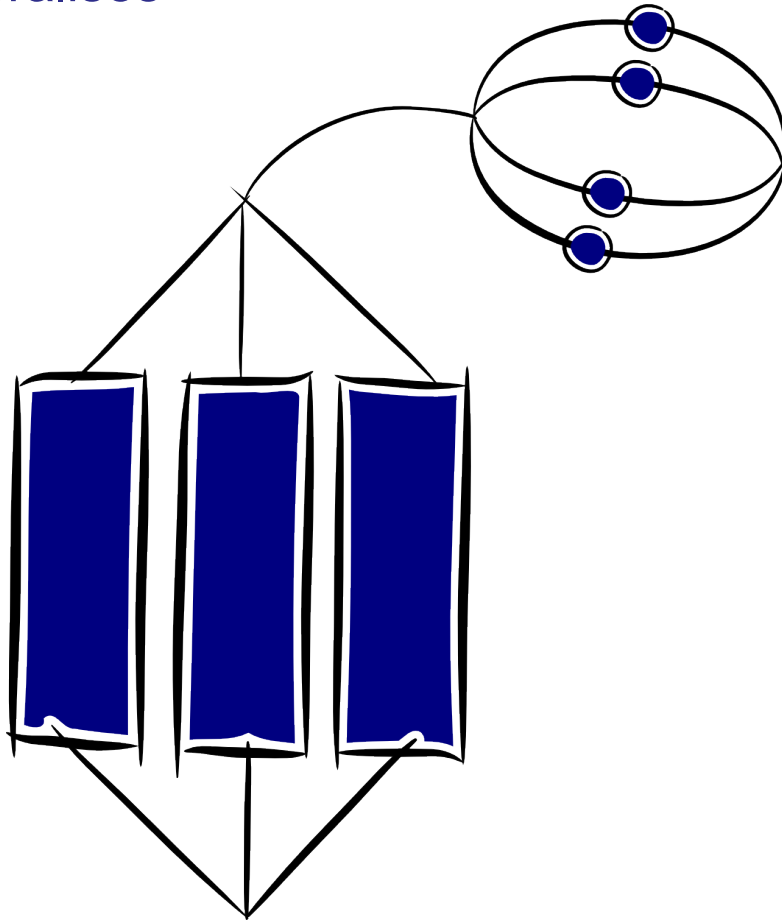


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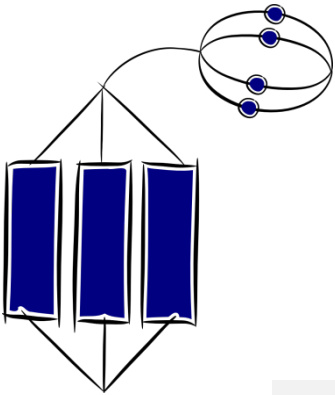
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SOLO EXTENDED ABSTRACT:

Learning outcomes go beyond subject and makes links to other concepts - generalises



“I have several ideas about ... I can link these ideas to the whole and look at these linked ideas in a new way.”



What thinking interventions would enhance the conditions of value for extended abstract learning outcomes?

de Bono Green Hat

Critical Path Analysis

Ryan's Invention Key

What if ...

de Bono C&S

See Think **Wonder**

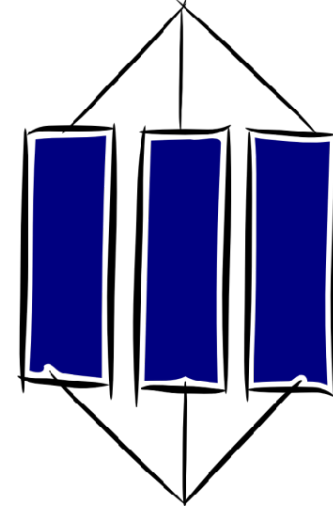
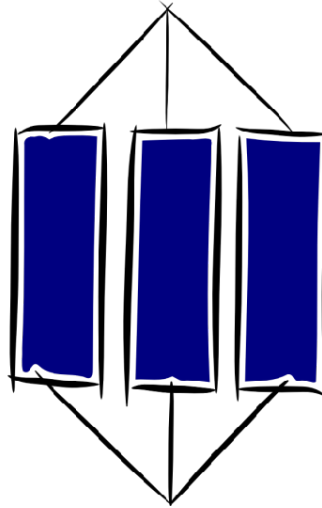
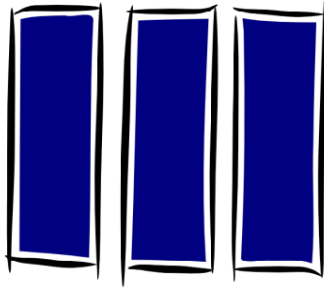
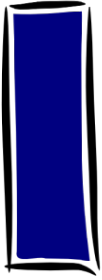
de Bono Blue Hat

Systems Diagram

Ryan's Prediction Key

and

Thinking interventions and SOLO Taxonomy



Target Map
Matching items
5W's
de Bono Red Hat
...

de Bono White Hat
Circle Maps
Spider Diagrams
de Bono CAF
Brainstorming
Alphabet Key
Picture Key
See Think Wonder
...

Venn Diagram
SWOT Analysis
de Bono PMI
See **Think** Wonder
Continuum Lines
Story Board
de Bono Yellow Hat
de Bono Black Hat
GANTT Charts
Disadvantages Key
Commonality Key
...

de Bono C&S
See Think **Wonder**
Fishbone Diagram
What if ...
de Bono Green Hat
de Bono Blue Hat
Critical Path Analysis
Prediction Key
Invention Key
...



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transforming learning outcomes

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