



International Boys' Schools Coalition
committed to best practices for teaching boys around the globe

The elusiveness/illusiveness of creativity – nurturing its nature

International Boys' Schools Coalition
19th Annual Global Conference

UNEARTHING CREATIVITY

Scotch College
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OVERVIEW

- 1. Creativity – *what it is... what it is not...***
- 2. The nature of creativity – *elusive and illusive***
- 3. Under what conditions is creativity nurtured?**
- 4. Creativity *for what?***

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CREATIVITY – what it is... what it is not...

Creativity **can be** expressed in **art forms** – visual, dramatic, dance, music, film, poetry

→ **BUT** it's not equivalent to being artistic.

Creativity **can** emerge from **divergent thinking**.

→ **BUT** it's not equivalent to divergent thinking.

Creativity **can** result in **inventiveness**

→ **BUT** it's not equivalent to inventiveness.

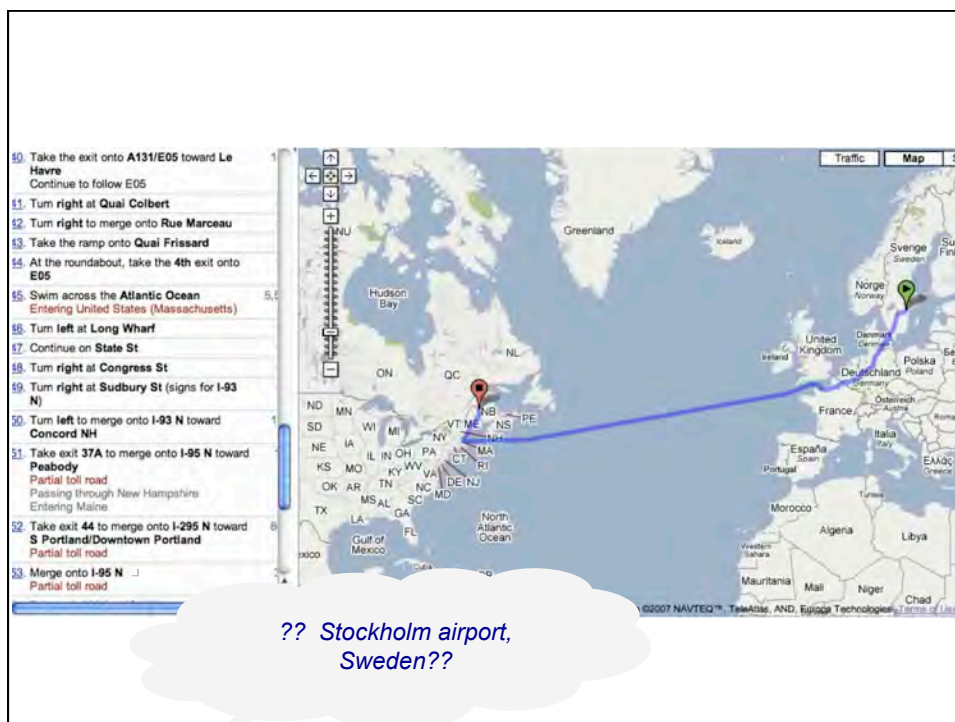
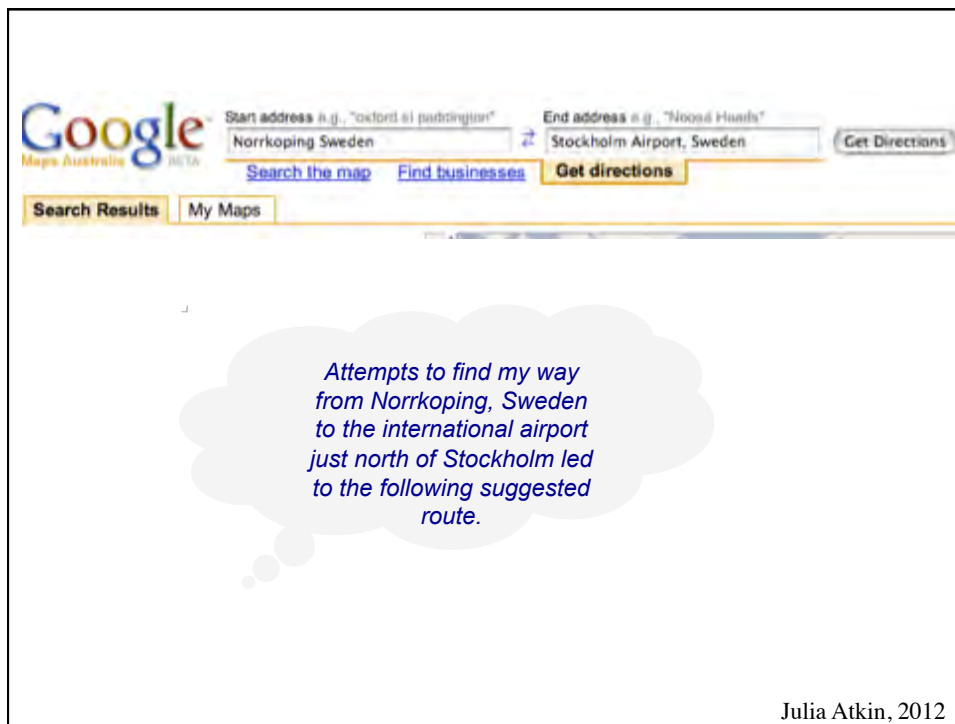
▪ *'The sheer secrecy of creativity- the difficulty in understanding how it happens, even when it happens to us – means that we often associate breakthroughs with an external force.'* Jonah Lehrer

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REFLECTION

On the following slides there are several examples of creativity that have captured my attention and admiration. In our quest to understand creativity, what, if anything, do they have in common?

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40. Take the exit onto A131/E05 toward Le Havre
Continue to follow E05

41. Turn right at Quai Colbert

42. Turn right to merge onto Rue Marceau

43. Take this ramp onto Quai Friesland

44. At the roundabout, take the **4th** exit onto **E05** 0.9 km
2 mins

45. Swim across the **Atlantic Ocean** 5,572 km
Entering United States (Massachusetts) 29 days 0 hours

← 46. Turn **left** at **Long Wharf** 0.2 km

47. Continue on **State St** 0.5 km
2 mins

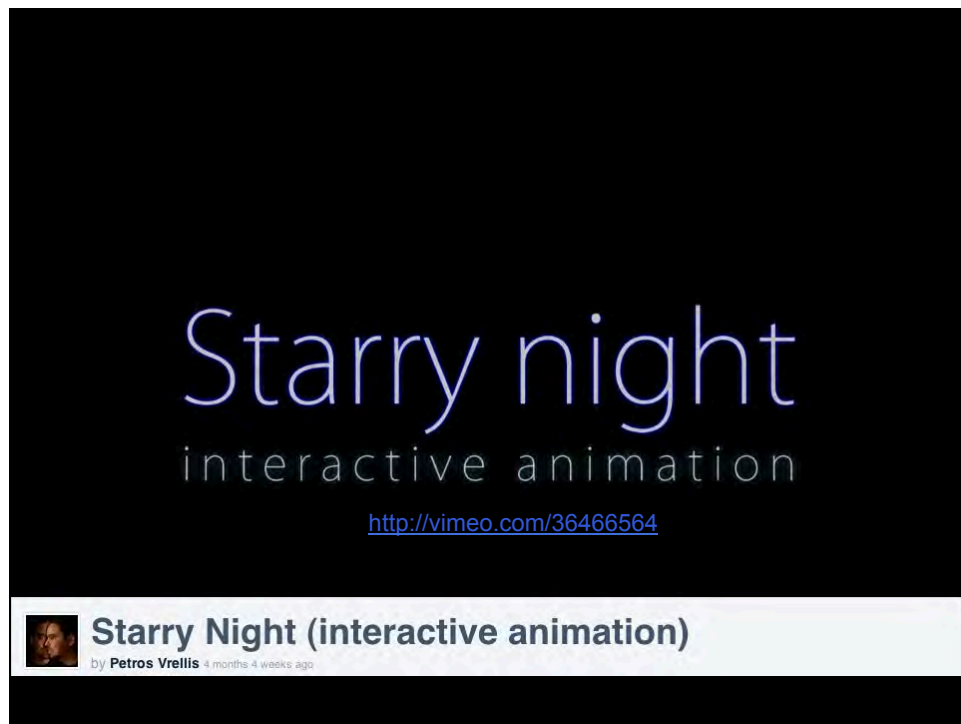
48. Turn right at Congress St 0.4 km

S Portland/Downtown Portland
Partial toll road

49. Merge onto I-95 N
Partial toll road

An 'easter egg' planted by a computer programmer, possibly when stuck on some difficult programming problem!







This LANDCARE LOGO emerged from an insight moment while the designer was sitting, head in hands, in desperation at lack of inspiration!

BRIEF REFLECTIONS

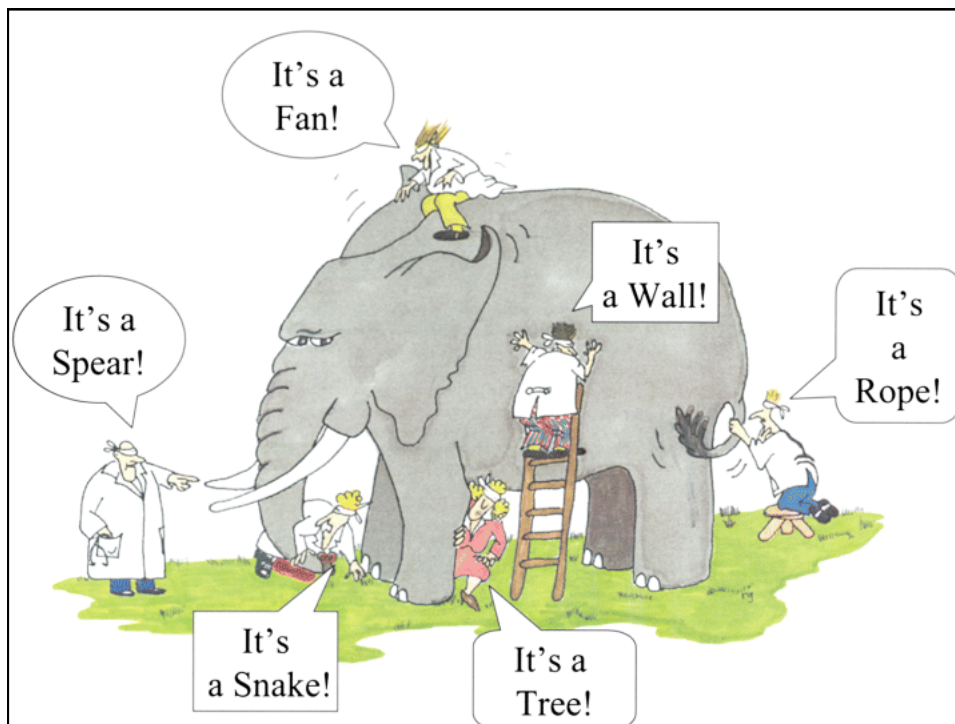
It is hard to tie down exactly what is involved in creativity...

- sometimes a flash of **'insight'** comes after **a lot of ground work** – the LANDCARE logo, my own example of solving the problem of the evidence for two chemical compound when there was supposed to be one, by glimpsing the mirror image quality of my hands
- sometimes a **lot of hard work follows** a germ of an idea – Hugh's video *Will the Real Mitt Romney Please Stand Up* – **hard work** is common whether before or after the idea
- sometimes creativity involves **artistic expression**, at other times **problem solving, new ideas, new combinations** of old ideas, seeing things in new ways, humorous ways – **novelty, originality** is common
- sometimes creativity involves **divergent thinking**, sometimes zeroing in on through **convergent thinking** leads to a creative breakthrough

Perhaps what all acts of creativity have in common is that they **emanate from our imagination** - either our individual imagination or collective imagination through collaboration.

To think of creativity as one thing is as fraught with difficulty as a blind person describing an elephant by touching only one part!

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CREATIVITY - elusive and illusive

The play on words in the title, albeit unintentional, turns out to be quite apt – creativity is both elusive and illusive

Elusive

→ difficult to catch

Illusive

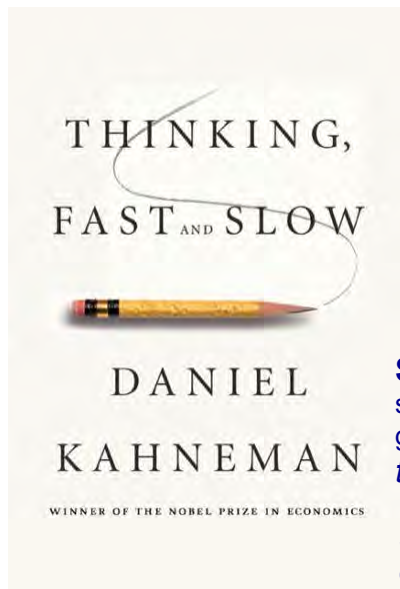
→ something likely to be wrongly perceived by the senses

Jonah Lehrer combines stories of creativity with scientific understanding of the process.



'The imagination can seem like a magic trick of matter – new ideas emerging from thin air – but we are beginning to understand how the trick works.'

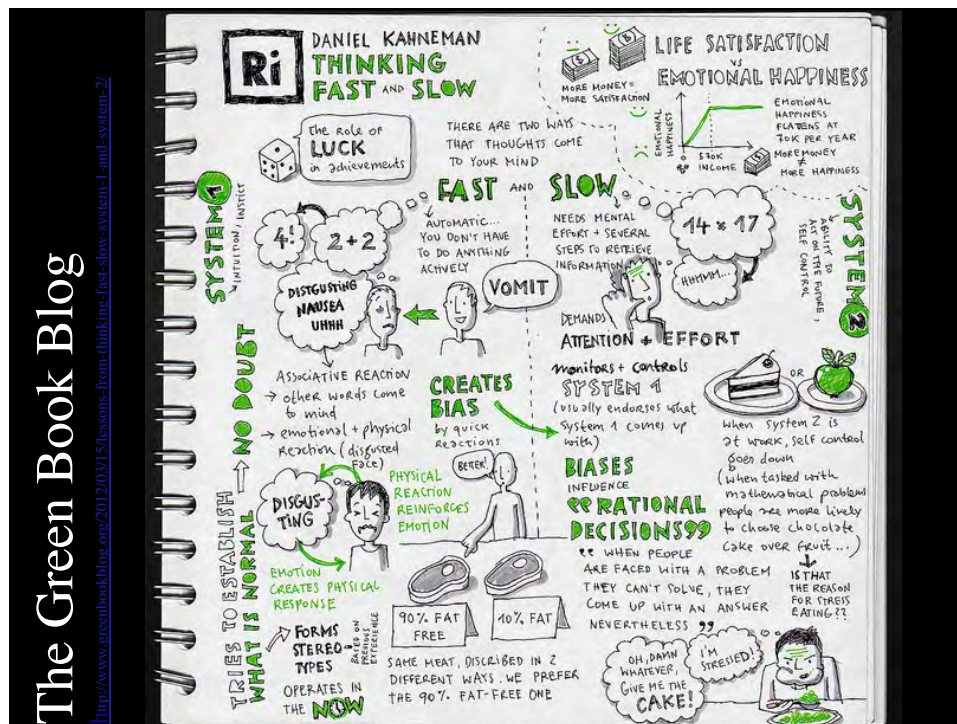
'The first thing this new perspective makes clear is that the standard definition of creativity is completely wrong. Ever since the ancient Greeks, people have assumed that the imagination is separate from other kinds of cognition. But the latest science suggests that assumption is false. Instead creativity is a catchall term for a variety of distinct thought processes.' Jonah Lehrer



http://www.youtube.com/watch?v=i_UVDD7ErJ4

System 1 Thinking– fast
survival oriented, recognise patterns,
generalise from the particular
the 'free spirit'

System 2 Thinking – slow
effort and attention, careful checking
the 'referee/umpire'



A key tension in education

The tension we experience between 'controlling/shaping/forming' versus 'educere' – 'unleashing the creativity from within' is unavoidable!

System prescription --- Personal freedom

→ this is built into the nature of our brain-mind system

1. A holistic, free-form, pattern recognition system → **freedom**
2. A controlled, ordered, focussed mode → **prescription**

→ our best functioning, our best learning occurs when we integrate both.

Recent research exploring our two systems of thinking/processing uses random association word tasks to enable the participant to be aware of when each mode of processing is operating.

Try the examples on the next slides and 'watch' your thinking. One example of the task is provided.

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Research on insight and creativity

What one word can be combined with each of the following words to create a compound term?

LaGuardia	Tullamarine	Gatwick	airport
measure	worm	video	?
hound	pressure	shot	?
home	sea	bed	?
mile	sand	age	?

Models of thinking

The Creative Brain



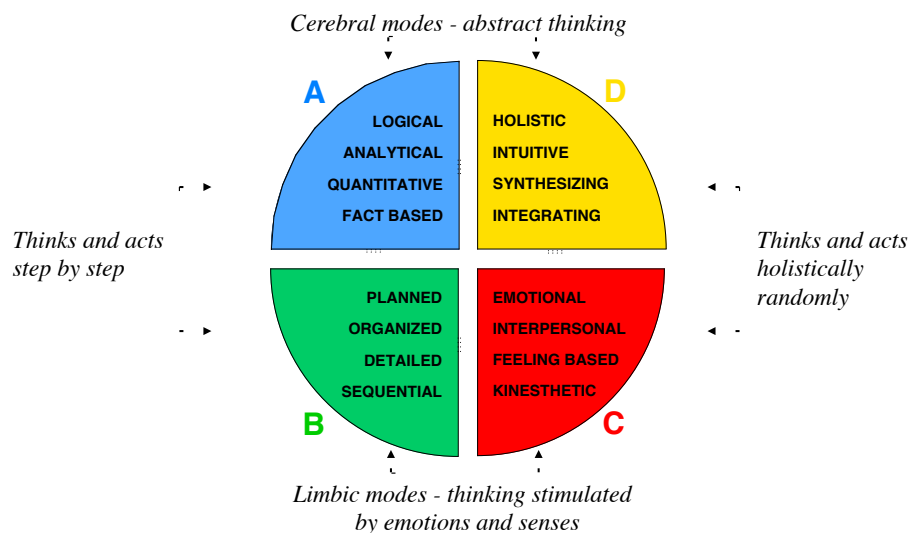
by Ned Herrmann

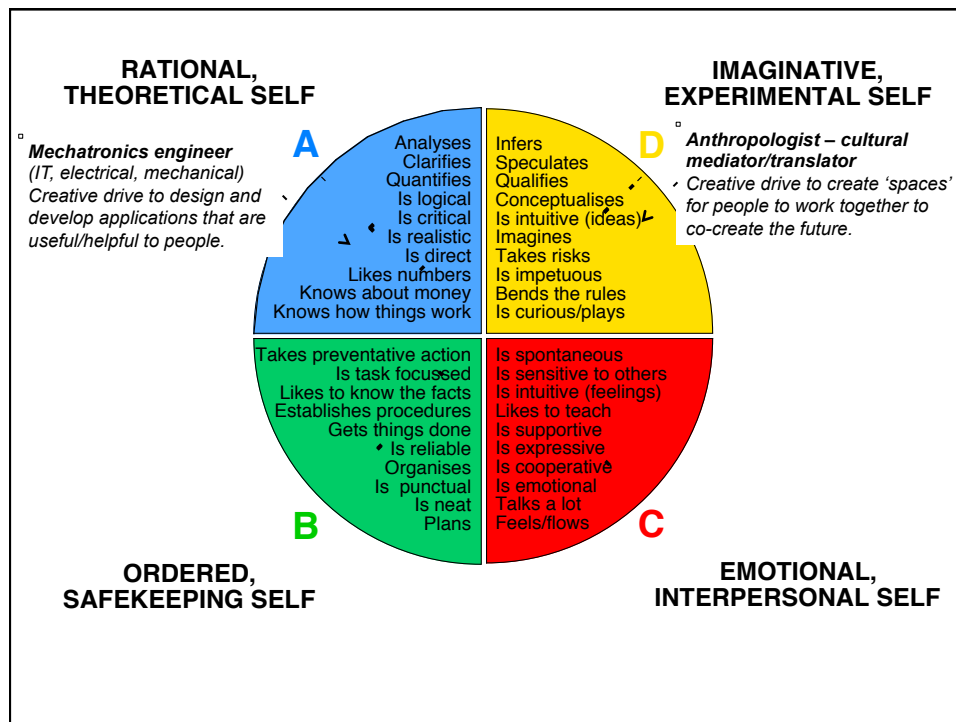


In his quest to understand his own duality (holistic and analytical thinking expressed in art, music and engineering) as well as his quest to understand the ways of thinking and associated behaviours of colleagues, Ned Herrmann, inspired by findings of split brain research, developed a METAPHORICAL MODEL of human processing/thinking.

Although neuroscience would now present more sophisticated models of the brain than the models that inspired Ned in the 70's, his Whole Brain Model of thinking and thinking preferences is still an extremely useful and powerful model of thinking processes and individual preferences in thinking. Like Daniel Kahnemann, Ned Herrmann captures the nature of the two systems of thinking. Ned charts the creative process as an integrative process involving many modes of thinking.

Ned Herrmann's Whole Brain Processing Model





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REFLECTION

*When you think of **creativity** what is the first word that comes to mind?*

When you think of creativity what is the first word that comes to mind?



Source: Ottaway-Careltan District School Board <http://www.leadthewaytocreativity.com/>

REFLECTION

If your staff and students were asked to use the first three words that come to mind to describe the learning culture of your school, what would the 'Wordle' say?

- A. Would it mirror the previous 'Wordle'?*
- B. Would it show a balance between the words that come up for creativity AND and those that represent and ordered, structured environment?*
- C. Would it lean towards words that convey an ordered, structured controlled environment?*

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Nurturing its nature

How does one nurture creativity in a school setting?

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CONDITIONS FOR CREATIVITY

1. Cultivate the learning culture

- open, inclusive culture, prepared to take considered risks
- quest to improve – professionally, and as learners
- collaborative

*‘When ideas are shared, the possibilities do not add up, **they multiply.**’* Paul Romer

2. Deep knowing of students, mentoring relationships

Know who they are (inner drives and dreams) and help them become who they can be.
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3. Students deep knowing of themselves

- passions, interests
- as thinkers and learners - **metacognition** → **self direction**

4. Design, design, design THEN plan

- pedagogy – *learning as a creative act! Authentic projects, authentic assessment*
- curriculum – escape silos, embrace interdisciplinary approaches to problem solving and learning
- redesign the industrial era, mass production ‘egg carton’ classroom -design ‘learning landscapes’- environments/physical spaces, collaboration, ICT
- use of time - reflection, ‘free time’ as crucial not a waste of time

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CONDITIONS FOR CREATIVITY

5. Authentic, holistic learning experiences and performance

(see next slides)

6. Personalise, personalise, personalise

Creativity is an extremely personal act – it emerges from within.

7. Play, play, play...

Free form play of all forms – in art, in music, in games, in social settings, in sport, in physical play in the natural and built environment lay the foundations and patterns that provide the source for creative problem solving.

Laura Schulz research <http://bcs.mit.edu/people/schulz.html> with pre-schoolers showing the different impact of **direct instruction** → **stifles creativity** vs **modelling of curiosity and inquiry** → **greater exploration by young kids**

<http://web.mit.edu/newsoffice/2011/teaching-children-0630.html>

8. Bring in) newness, mix it up

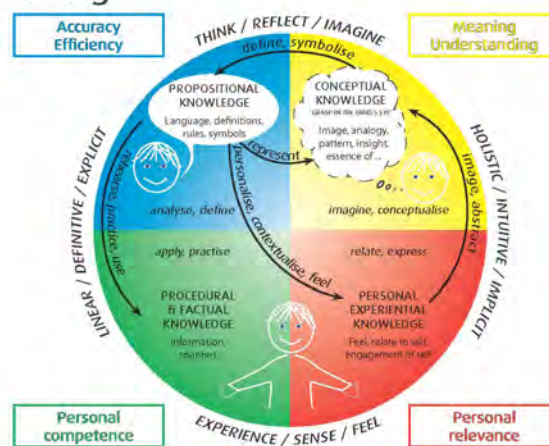
Break routines, invite new ways to do things, bring in surprises, go to different places.

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Learning as a creative act the 'essence' of constructivism and powerful pedagogy

*The task of the educator is not to put
knowledge where knowledge does
not exist but rather to lead the
mind's eye that it might see for itself.*
Plato

Integral Learning



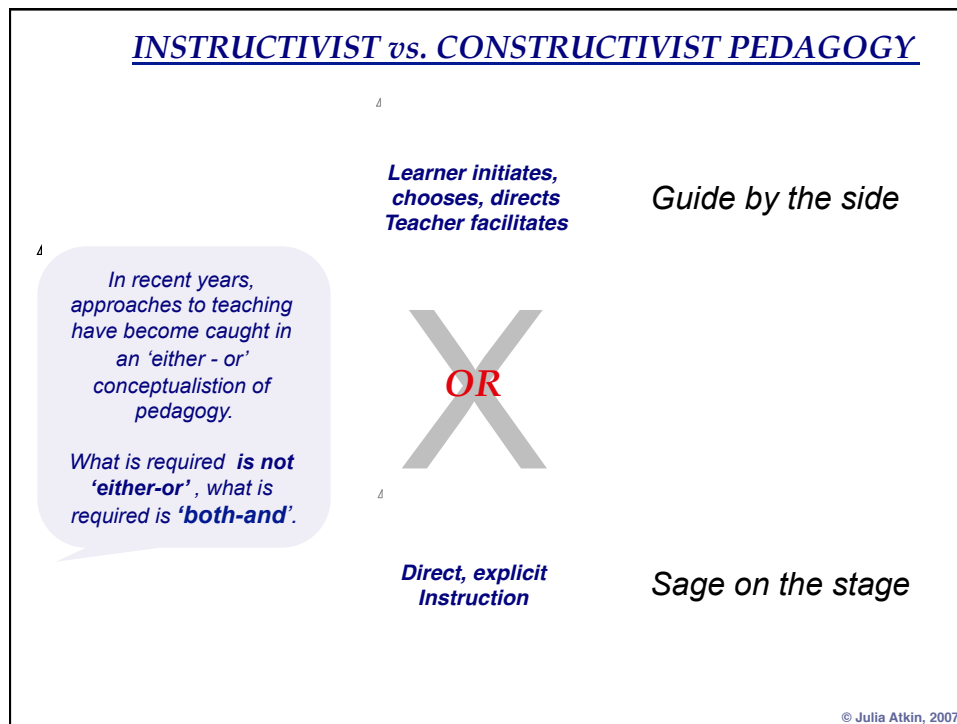
Human learning is deepened and amplified by integrating our multiple ways of knowing.

Teach to **ENGAGE** and **INTEGRATE** all modes of processing regardless of personal thinking style.

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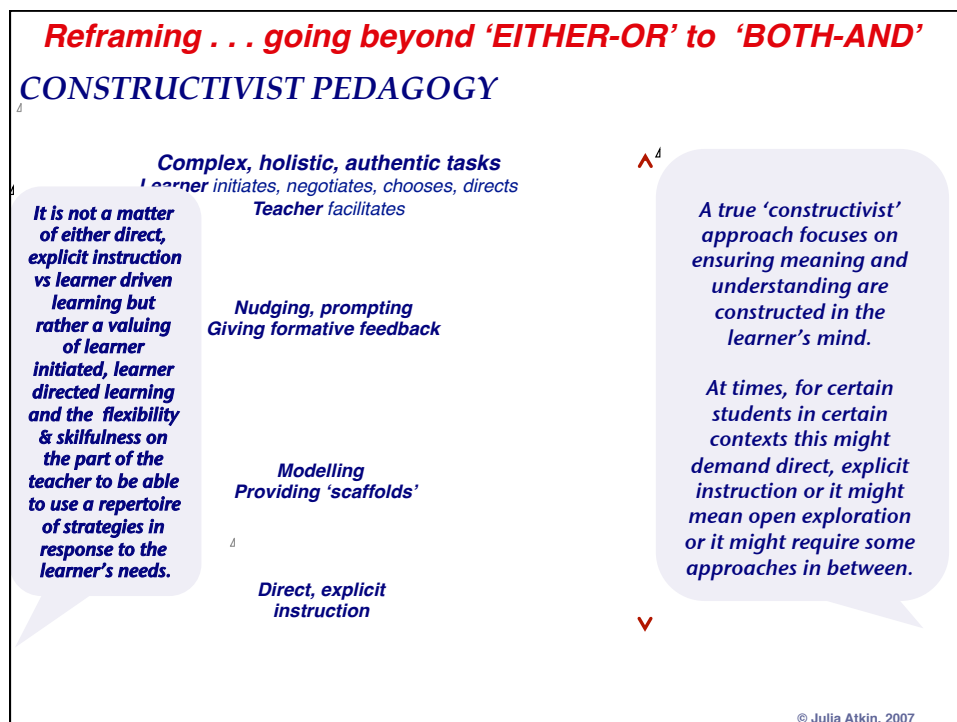
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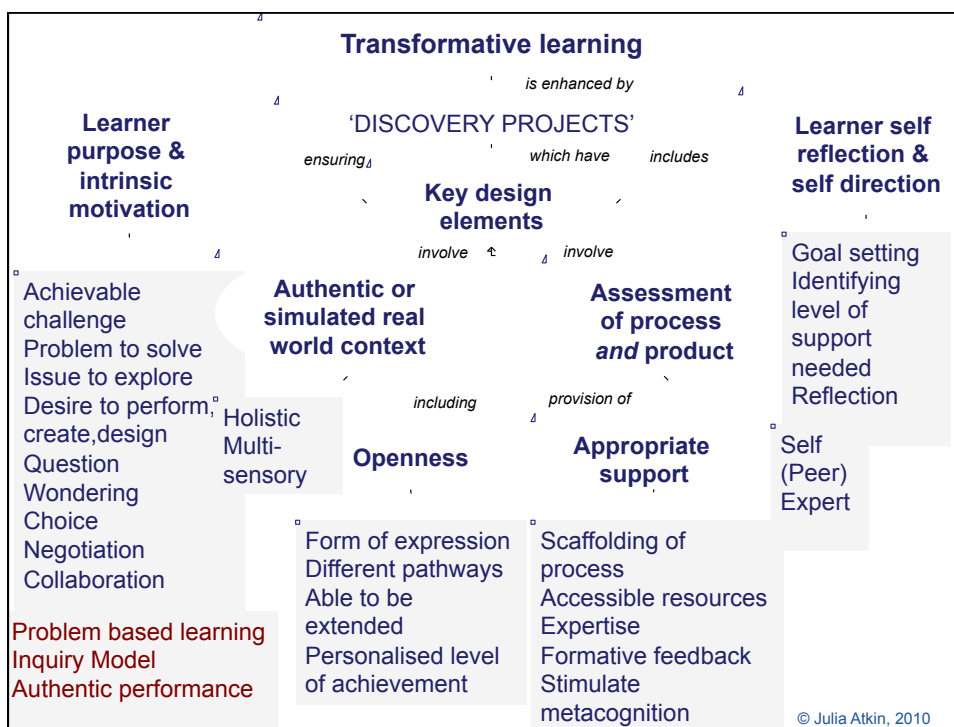
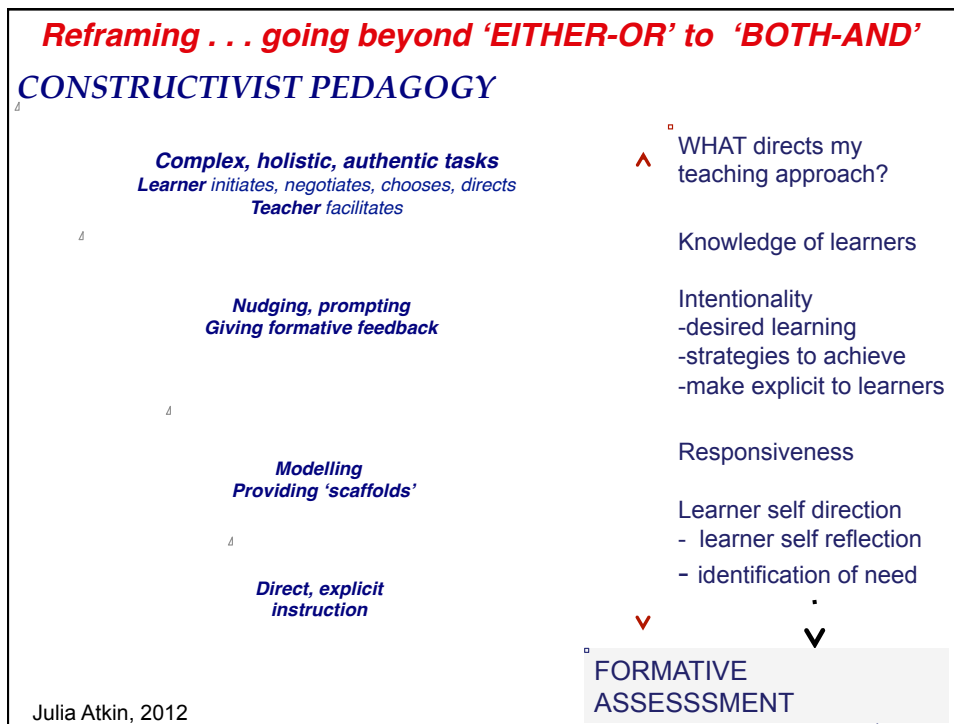
INSTRUCTIVIST vs. CONSTRUCTIVIST PEDAGOGY



Reframing . . . going beyond 'EITHER-OR' to 'BOTH-AND'

CONSTRUCTIVIST PEDAGOGY



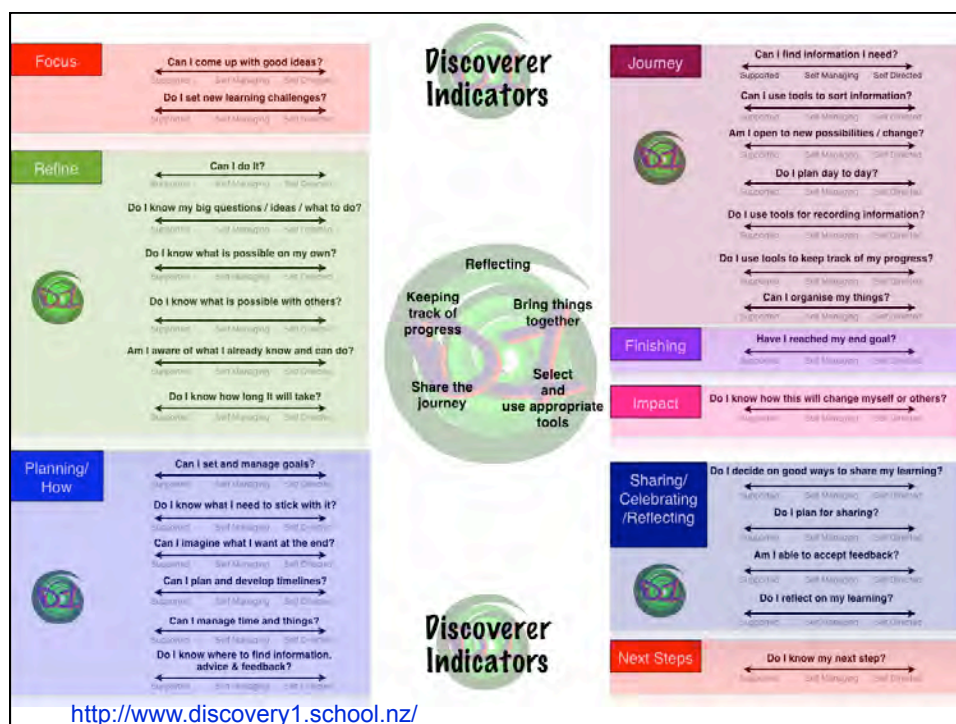


Developing the capacity of learners to **manage and direct their own learning** requires a very deliberate, explicit approach laced with **METACOGNITION**.

At **Discovery 1 School in Christchurch, NZ** learners from kindergarten onwards learn how to direct their own learning. Obviously at first it is very highly supported by teachers and it leads gradually to autonomy.

Even from Year 1 learners are writing their own reflections on their learning in the form of 'learning stories' – managing and directing their own learning is taught just as explicitly as any other element of the curriculum.

When the learners engage in 'Discovery Projects' they use a metacognitive reflection tool to help them learn to direct and improve their own learning.



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FINAL THOUGHTS

"We can't solve problems by using the same kind of thinking we used when we created them." Einstein

9. **Have courage and be committed to unleashing the creative potential of your students to shape the future for humanity.**

"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius -- and a lot of courage -- to move in the opposite direction." Einstein



"Wait! Wait! Listen to me! ... We don't HAVE to be just sheep!"

Gary Larson

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