

Workshop

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... but how does it happen?

*... the key to autonomy is that a living system
out of its own resources finds its way into the
next moment by acting appropriately...*

(Varela, 1975)

A mix of things

Acquired behaviours

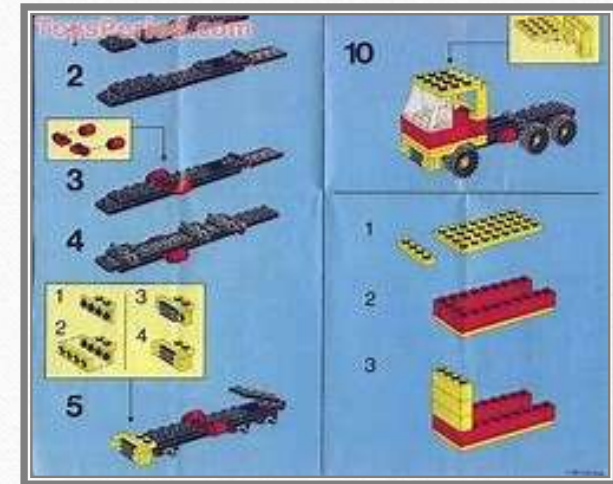


...and new possibilities



Instruction

- The computational approach considers the learner and the world as separate.
- The idea is that by learning rules, facts and instructions the learner can be ‘prepared’ to act in the world.
- The world **is presented** to the learner



Interaction and Investigation

- The child is presented to the world...
- In order to be investigated for oneself
- Inner curiosity; stages of maturity, physical development etc.
- What is **learnt** is expressed in terms of an object which is well-defined in language to represent the world 'out there'. (*"I made a house!"*)



Affecting... and being affected by...

- Cognition and learning are enacted through the flow of materials, energy and information between **across the skin, cells, fluids and synapses of thought...**
- Meaning is not 'attached' to things that pre-exist apart from ourselves... meaning is found **through relationships...**



Sense-experiences

6 pairs at the sand tables

4 pairs at the plasticine tables

2 pairs at the clay tables



Playing with sand....



- How does your body respond? How does the sand respond?
- Try with your eyes shut: what images, words come to mind?
- Verbalise and ask the person in your group to write it down
- When you feel you are finished take a look at your tray: what does it look like in relation to the other trays?



Observation and attention

- What is **‘sand’**? What are its ‘components’? Share your ideas with your peer. Do you agree?
- How do the different parts come together in the sand assemblage?
- What happens when the sand runs through your fingers...?
- What happens to ‘sand’ when is wet?
- What about the ‘stone’, or the ‘shell’... do they belong? How?

Playing with plasticine and clay



- How does your body respond?
How does the clay respond?
- Try working the clay in your hands with your eyes shut: what images, words come to mind?
- Verbalise and ask the person in your group to write it down

Playing and noticing

- How did the clay/plasticine change since your first started moulding it? What are their characteristics?
- Now build a little clay/plasticine figure and make it stand on one leg...
- What do the figures look like? What happens to the figures as time goes on?



Personal reflections

- What did I learn from the ‘materials’ in this process?
- What did the materials learn about ‘me’?
- What did we learn of each other while ‘making’?
- How did I feel through the course of the activity?
- In what way could this workshop be applicable with my own students?

Not only techne'

“All skills even the most abstract, begin as bodily practices; second, that technical understanding develops through the powers of the imagination. The first argument focuses on knowledge gained in the hand through touch and movement. The argument about imagination begins by exploring language that attempts to direct and guide body skills.

(Sennett, p. 35)

Embodied

- Neurologically, cognition develops across the body-mind-environment continuum, and it is encapsulated in language;
- Abstract concepts such as ‘Metaphors’ are rooted in early childhood body-environment experiences.
- For example, metaphors involving spatial relationships: e.g. ‘More is up’; ‘less is down’; ‘healthy is up’; ‘sick is down’...
- Or spatial-affective: warm/close; distant/cold; love is a journey...

(Lakoff and Johnson, 1990)

Why is this so important

1. Metaphor is not just a literary embellishment. It is central to our ability to communicate personal experiences or ideas in terms of 'something else' which is more tangible.

2. Any metaphor we use is the result of a whole physical embodied experiences of an individual in the world



Language and knowledge

Cut, Paste, Copy, Find...

• Word processing metaphor...

- 1. cut
 - isolate desired DNA
 - restriction enzymes
- 2. paste
 - ligase
- 3. copy
 - plasmids
 - bacteria
 - transformation
 - PCR
- 4. find
 - Southern blotting / probes



P Biology

2005-2006

- Many metaphors have become ‘dead’
 - We no longer recognise them as such
 - A disconnect occurs between;
 - Felt reality and abstract concepts
 - Animate experience and inanimate words
- ‘Making’ with materials can re-activate our relationship with the world and our ability to express ourselves responsively towards it .

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