

# The growth of learning power: designing the launch-pad for learning

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## 3 facets of learning

1. Anticipation, prediction, control
2. Expanding the capacity to learn (C2L)
3. Shrinking C2L

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- Groups of four
- +
- One computer
- +
- Internet
- +
- An interesting question



“can teach themselves (almost) anything”



Unless there is a teacher about  
TEACHING IS TOXIC FOR LEARNING

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## Dispositions toward uncertainty

### Protective

- Anxiety
- Distress
- Withdraw
- Seek rescue
- Seek comfort

### Expansive/Learning

- Interest
- Attention
- Engage
- Explore
- Persist

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## Incubators of learning habits

- Both PDs and LDs are necessary
- Both are appropriate
- But which is the default?
- Which predominates?
- Your default determines **speed** of development
- And **direction** of development
- Environment is an incubator...
  - Which do we incubate???

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## ECE is an interplay between

- Unfolding dispositions
  - Biological maturation / kick-in
- And
- Acquired dispositions
  - Cultural 'training'

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## LOS1.0: Natural born learners

- Brains are proliferating and pruning
- Wearing tracks in the neural jungle
  - Picking out patterns
    - ‘What follows what?’, ‘What goes with what?’, ‘What happens if I...?’
    - “Predictive coding”
- Knowledge, experience, sensibilities and skills
- At first, it’s holistic and receptive

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## THE BODY AS A BRAIN

- Brain – CNS and ANS (polyvagal theory)
- Heart (responsive to other areas, e.g. face)
- Gut (intestinal receptors and secretions)
- Hormones (adrenaline, dopamine, ACh)
- Immune system (e.g. peptides)

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## LOS 2.0: Amplification

- Development of frontal lobe ‘executive function’
  - Selective attention (‘fine tuning’)
  - Variable beam (for thinking and dreaming)
  - Sequencing and prioritisation
  - Impulse control / checking
    - Katerina (5) – ‘On second thoughts...’
  - Perspective-taking / empathy
    - Marcia (3) – a conflict of interests...
  - Imagination: decoupling perception and action
    - Scenario planning

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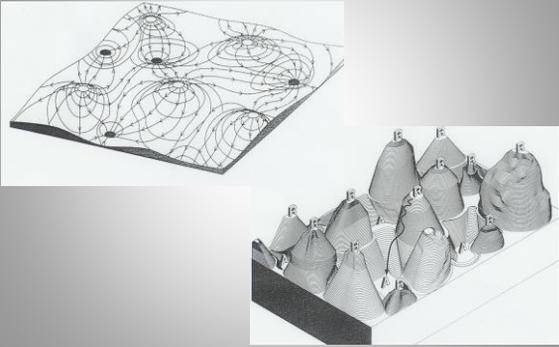
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## The functional brain



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## LOS 3.0 Looking for trouble...

- Active experience seeking
  - exploring
  - prodding
  - questioning
    - How many per day??



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## LOS 4.0 Imitation

- **Imitation** – ‘how do they do it?’
  - Wired in; mirror neurons
  - 2yos are faithful mimics (Paul Harris)



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## LOS 4.0 Amplification through experience

- **4.1 Imitation**
- **4.2 Imagination** (as internalised perception, action and imitation)
  - Generative 'models of other people' (MOPs)
  - Allows perspective-taking
- **4.3 Playing with ideas:** the power of reverie
- **4.4 Explanations:** 'maybe it's because...' and 'if so, then...'
- **4.5 Logic:** 'it ought to follow that...'
- **4.6 Reminiscence:** 'what happened last time?' (the evolutionary value of episodic memory?)

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## Making and mulling

- The first-order learning world is ephemeral and purpose-driven
- Deeper learning is enabled through
  - 4.7 Stabilisation of 'learning in progress'
    - Making things, drafts, sketches,
  - 4.8 Revisiting memory under different or weaker motivation sets ('second pressing')



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## 5.0 Developing your learning resource bank

- Material
  - Resources and tools
- Social
  - Contacts
  - Collaborators
  - Supports
  - Sounding boards
- It's always 'person plus' (David Perkins)

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## Developing learning power: general-purpose habits of mind

- Curiosity – questioning, wondering, scepticism
- Determination – patience and resilience
- Exploration – satisfying tinkering
- Craftsmanship – a taste for excellence
- Imagination – playfulness of mind
- Reasoning – thinking carefully, analysis and argument
- Conviviality – social skill in uncertainty
- Mindfulness – standing back, taking stock

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## Laying the foundations for eager and able lifelong learners

- Structure and freedom (Doreen Arcus)
- Unregulated peer-play (builds self-regulation)
- Mind your language: 'could be'; 'ability'
- Encourage messing about (tolerating uncertainty)
  - Angus's 'don't know'
- Personal bests: recording, celebrating and revisiting
- Learning heroes and adventure stories

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- “No Put Down Zone”
- Challenging activities
- Q – WAIT – PICK: esp Why and How questions
- A&P – anticipate and predict (jigsaw puzzles)
- No erasers
- Try 3 before me
- The STUCK poster
- 2 Stars and a Wish for your partner
- Spot the Mistakes
- Display Work-In-Progress
- Learning-focused quotes and heroes
- A Wonder Wall

**THINGS TO TRY IF YOU GET STUCK:**

- Ask a friend
- Read the question again
- Use a number line
- Split the question up
- Ask yourself – What do I know already that could help me?
- Use a reference book
- Use a dictionary
- Check the internet
- Share the problem
- Go for another question and come back to the bit you are stuck on later




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**The deadly sins  
How to shrink learning capacity**

- Teaching too much
- Indulging our need for efficacy and control
- Over-praising and over-rescuing
- What are you trying to do? – over-thinking
- Labelling and boxing
- ‘Ability attributions’ (Dweck, Eccles) and ‘impossible selves’ (Marcus and Nurius)
- Models of dogmatism, Is-ness, passivity, panic or impatience
- Impoverished or chaotic environments
- Aimless, playful environments [busy, happy ain’t enough]
- Through lack of opportunity to learn to think and talk about learning [invisible]
- ...

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**We know how to do it**




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- [www.buildinglearningpower.co.uk](http://www.buildinglearningpower.co.uk)
- [www.expansiveeducation.net](http://www.expansiveeducation.net)
- [www.learningqualityframework.co.uk](http://www.learningqualityframework.co.uk)
- [guy.claxton@winchester.ac.uk](mailto:guy.claxton@winchester.ac.uk)

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