

## Cultivating creative learners in HE: lessons from research on Building Learning Power

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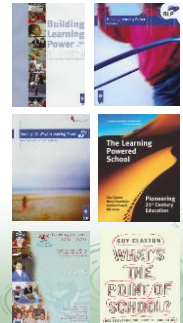
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## Building Learning Power

- **Aim:** to get good results by building confidence, capacity and appetite for creative learning
- **Focus:** "epistemic apprenticeship"
- **Key metaphor:** classroom as fitness centre; teacher as learning coach
- **Process:** cumulative small modification to teaching habits and learning culture
- **Scope:** 15 years; 3,000 schools and colleges; 10,000 teachers; 14 countries...
  - Ireland, Spain, Switzerland, Finland, Poland, Turkey, Dubai, Singapore, China, New Zealand, Australia, Argentina, Brazil, USA...



- "Students often don't grasp the full meaning of learning. Learning is finding out something that you did not know and struggling with it. It's almost as if, if [today's students] do not know something immediately, they feel as though they are failing."
  - Alan Percy, Director of Counselling, Oxford University
- "In my old school they just gave you harder and harder worksheets. But here they really *stretch you to learn in different ways*. You get lots of encouragement so you learn to keep going and 'dig deep' when things get difficult. Now I always like to see if I can take things one step further"
  - Tom, 15

## Learning worth its salt

### Learning

- Difficult
- Slow
- Uncertain
- Error strewn
- Emergent
- Innovative

### Requires

- Resilience
- Patience
- Imagination
- Collaboration
- Self-evaluation
- Courage

## The Rationalist View of HE

1. It's all about Transmission of Knowledge
2. Knowledge leads to Expertise
  1. You Know and then you Implement
3. Student learning is intellectual and incremental
  1. Their Reasoning matters most
4. Lecturers are primarily Knowledge Transmitters
  1. Oracles and Quality Controllers
5. Universities are the "cathedrals of intelligence"

## A complementary view

- Higher education is not (so much) the mastery of complex bodies of knowledge; it is the development of professional and scholarly *habits of mind*
  - Learning to think and learn like an archaeologist, a zoologist, a lawyer, a surgeon ...
- Universities are collections of epistemic 'communities of practice', with students as 'new-comers' and professors as 'old-timers' (Lave and Wenger)
  - Centering on the love and craft of scholarship
- Students serve an 'epistemic apprenticeship'
  - Guided and modelled by their lecturers

## The layers of apprenticeship

- Knowledge – fact, theory, precedent...
- Domain specific skills
  - analysing documents, searching data-bases, designing experiments
- Generic habits of mind
- Attitudes
  - knowledge as hard truth or provisional construction
  - role and status of intuition
- Values and interests
  - rationality, courtesy
  - what is 'interesting', what is ignored
- Identity
  - déformation professionnelle

## Epistemic craftsmanship

- **Wondering:** musing, questioning, collecting 'seeds'
  - noticing incongruity / poignancy
- **Critiquing:** doubting, triangulating, checking
- **Researching:** pursuing leads, collating notes
- **Storage:** transcribing, ordering, tagging, connecting
- **Imagining:** visualising, dreaming, intuiting
- **Crafting:** drafting, sketching, improving.
- **Collaborating:** discussing, floating ideas, sounding boards, critical friends
- **Story-telling:** arguing, reasoning, anticipating attacks
  - Writing – titling, structuring, signposting, summarising, referencing, finessing (arguably, plausible, thus etc)
  - Presenting – style, pace, humour, clarity

## Conveyed mainly implicitly

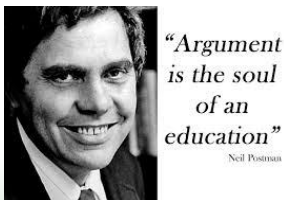
- Specific skills may be taught explicitly
- Habits of mind, attitudes and values are more usually transmitted by 'old-timers' via social contagion
  - Language: "Is" vs. "Could be" (Langer)
  - Example: e.g. openness as a learner
  - Activities: e.g. scaffolded observation
  - Seminars: modelling debate, problem-based learning
  - Responsibility of students: co-construction
  - Assessment: how the tail wags the dog

## Inviting creative thinking

what could this be?



## How Neil starts the year...



## Transparency and distortion

- The way a lecturer operates may separate or conflate the roles of student as 'knowledge consumer' or 'examiner' and student as 'apprentice researcher / professional'
  - The skills of studentship may be very different from the skills of scholarship
- Some practices reveals the genuine complexities of learning - the process of discovery; some hide those processes, and/or replaces them with a bogus model
  - e.g. publication conventions

## 'Is the scientific paper a fraud?'

- "The scientific paper is a fraud in the sense that it gives a totally misleading narrative of the processes that go into making scientific discoveries... Scientists should not be afraid to admit... that hypotheses appear in their minds along uncharted by-ways of thought; that they are imaginative and inspirational in character; that they are indeed adventures of the mind... Scientific discovery or the formulation of the scientific idea on the one hand, and demonstration or proof on the other hand, are two entirely different notions..."

Sir Peter Medewar

- In other words, Investigating and Reasoning are foregrounded; Experimenting/Tinkering and Imagining/Intuiting are underplayed

## Scientific creativity

"Words [and mathematical symbols] do not seem to play any role in my mechanism of thought. The psychic entities which seem to serve as elements of thought are *more or less clear images which are in my case of visual and some of muscular type*... [These take part in] a rather vague, combinatory play [which] seems to be the essential feature of productive thought"

Albert Einstein

## What could we do?

- Encourage lecturers to
  - Tell the truth about learning / discovery
  - Model wondering, not knowing
  - Use more Could Be language
  - Time to iterate and improve
  - Make it safe to wonder
  - More problem/project-based learning
  - Encourage collaboration and critique

## Re-imagining the university

- Scholarship is not the embodiment of 'intelligence'; it involves a sophisticated development of some specific forms of intellectual craftsmanship
- Scholarship is a craft, like gardening, jewellery-making or cookery, that can be humdrum as well as virtuoso
- The craft of scholarship, beyond a certain point, bears no relationship to how well people do complicated things in real life
  - e.g. medical students' grades do not predict clinical competence
- The job of higher education is to cultivate the creative habits of mind that people will genuinely need, if they are to earn a living and pursue their passions.
- **Our job as teachers is not just to 'tell' and 'mark', but to exemplify these habits of mind, and to orchestrate environments that are conducive to their development.**

Thank you

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