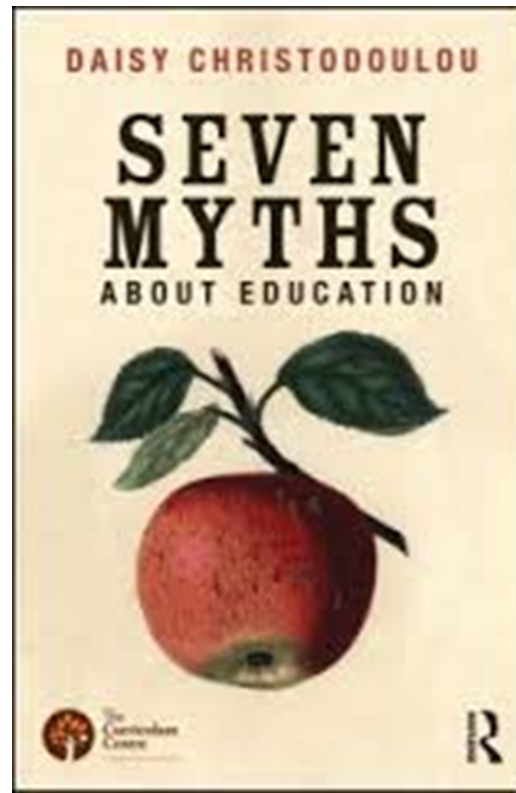


Seven Myths about Education: What are they and why do they matter?

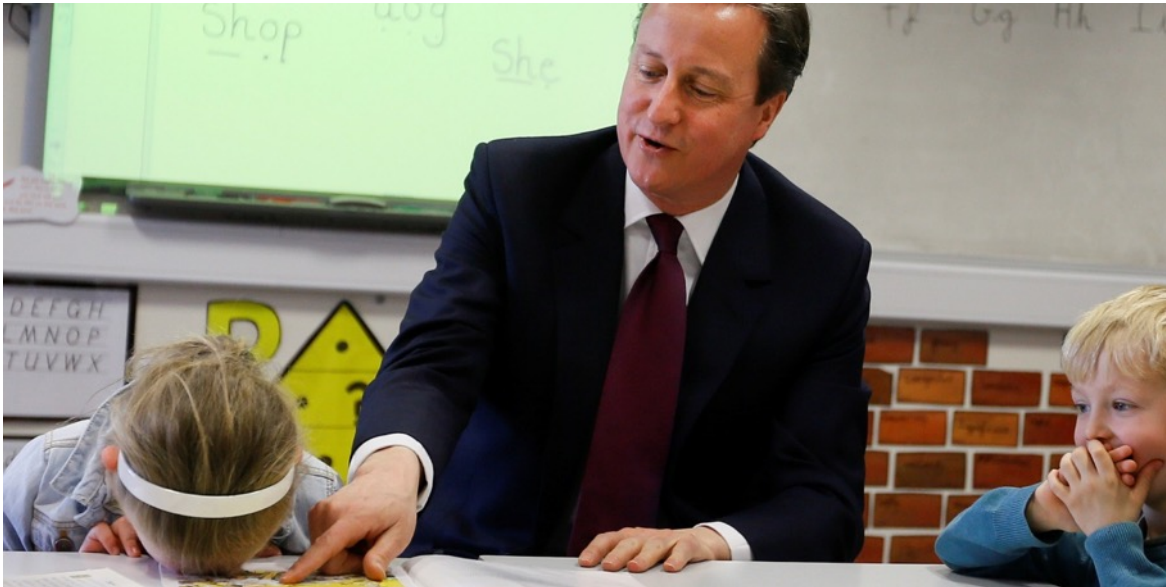
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Some anecdotes!

- The man on the plane and the glacier
- The congenial footballer



The seven myths

1. Facts prevent understanding
2. Teacher-led instruction is passive
3. The 21st century fundamentally changes everything
4. You can always just look it up
5. We should teach transferable skills
6. Projects and activities are the best way to learn
7. Teaching knowledge is indoctrination.

The importance of long-term memory, part 1

“Our understanding of the role of long-term memory in human cognition has altered dramatically over the last few decades. It is no longer seen as a passive repository of discrete, isolated fragments of information that permit us to repeat what we have learned...rather, **long-term memory is now viewed as the central, dominant structure of human cognition**. Everything we see, hear, and think about is critically dependent on and influenced by our long-term memory.”

Kirschner, Paul A., John Sweller, and Richard E. Clark. "Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching." *Educational psychologist* 41.2 (2006): 75-86.

The importance of long-term memory, part 2

- “The aim of all instruction is to alter long-term memory. If nothing has changed in long-term memory, nothing has been learned.”

We underestimate the knowledge we have and overestimate the knowledge children have

- The ‘curse of knowledge’ or expertise-induced blindness.
- This leads to skill being misunderstood as innate and discrete, when really it is learned and composed of knowledge.
- ‘All that there is to intelligence is the simple accrual and tuning of many small units of knowledge that in total produce complex cognition. The whole is no more than the sum of its parts, but it has a lot of parts.’ (Anderson J.R. ACT: A simple theory of complex cognition. *American Psychologist* 1996; 51: 355–365.)

How we depend on knowledge in order to make inferences

Or, the googly / curveball problem

- Jones sacrificed and knocked in a run. (Hirsch, *The Knowledge Deficit*)
- Mr Cameron is on a sticky wicket regarding his plans for renegotiating Britain's membership of the EU and the loyalty of his backbenchers.
- I believed him when he said he had a lake house, until he said it's only forty feet from the water at high tide. (Willingham, *Why Don't Students Like School?*, p.31)

The thesaurus experiment

- ‘Mrs. Morrow stimulated the soup.’ (That is she stirred it up.)
- ‘Our family erodes a lot.’ (That is they eat out.)
- ‘Me and my parents correlate, because without them I wouldn’t be here.’
- ‘I was meticulous about falling off the cliff.’
- ‘I relegated my pen pal’s letter to her house.’

So how do we remember things?

1. We remember what we think about –
'memory is the residue of thought'.
(Willingham, p.14)
2. We remember what we practise – practice makes perfect.

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