

Why is a knowledge based curriculum no longer fit for purpose?

What is a knowledge based curriculum?

I was in a school recently that described itself as having a 'knowledge-based curriculum'. Walking round the school with the head the key elements of this, which seem to be common across most secondary schools that I have visited, were:

- a focus on content that had to be covered (learnt)
- an emphasis on high academic achievement in national exams
- traditional, teacher focused pedagogy (as evidenced for example by the organisation of desks in the classroom so that all the children are facing the teacher 'at the front')
- the teacher (and teacher selected resources) being the only valid sources of expertise (as evidenced for example by most of the permitted talk being by the teacher or between the teacher and individual children)
- a lack of digital technology use by children - even where mobile devices are present children predominantly write on paper ([the Digital Technology Impact Framework](#)¹ does not consider looking at a digital display/interactive whiteboard that is being controlled by the teacher as children using digital technology)

This focus on a knowledge based curriculum, which lends itself to traditional teacher focused pedagogical practices, reflects [the 'new' English National Curriculum](#)² which is underpinned by a view that we need to "ensure that every child has a firm grasp of the basics and a good grounding in general knowledge" ([Schools minister Nick Gibb 7 June 2010](#)³). Thus, for example, in the specification for history "there is a strong emphasis on chronology which represents a move away from the practices of doing history towards the facts of history" ([Twining et al 2017 p.6](#)⁴).

The focus of a knowledge based curriculum is on knowing in the sense of being able to recall and explain information.

Why isn't this fit for purpose?

I'd suggest that there are two key reasons why a knowledge based curriculum is no longer fit for purpose: one to do with how people learn and thus what effective teaching looks like (the pedagogical reason); and the other to do with the ways in which digital technology, especially AI, is impacting on our lives and in particular the world of work (the pragmatic explanation).

The pedagogical explanation

[As I have argued previously](#)⁵ we need to distinguish between formal learning and what I have called 'human learning'. Formal learning aligns with a behaviourist or information processing stance (what Patricia Murphy labels Traditional in [the Innovative Pedagogy Framework](#)⁶). Human learning aligns with a sociocultural stance (Innovative in the [Innovative Pedagogy Framework](#)⁷).

With shifts in theoretical understanding (including [for example from neuroscience](#)⁸) the evidence suggests that sociocultural theory provides a better explanation of learning than behaviourism -

¹ <https://halfbaked.education/the-digital-technology-impact-framework-dtif/>

² <https://www.gov.uk/government/collections/national-curriculum>

³ <https://www.gov.uk/government/news/government-announces-changes-to-qualifications-and-the-curriculum>

⁴ http://edfutures.net/images/e/e7/NP3_Meta-analysis_report.pdf

⁵ <https://halfbaked.education/what-do-you-mean-by-learning/>

⁶ <https://halfbaked.education/murphys-innovative-pedagogy-framework/>

⁷ <https://halfbaked.education/murphys-innovative-pedagogy-framework/>

⁸ <https://www.technologyreview.com/video/611350/the-future-of-education/>

and that human learning is more effective than formal learning. As a knowledge based curriculum is closely associated with formal learning it is associated with a less effective pedagogical approach to learning.

The pragmatic explanation

The world is changing rapidly, and this is impacting on the outcomes that we need from education. This is often framed as being about [the need to develop 21st century skills](#)⁹. Ken Robinson and Lou Aronica frame this in terms of our industrial age model (i.e. a knowledge based curriculum) and argue that "these systems are inherently unsuited to the wholly different circumstances of the twenty-first century" ([Robinson and Aronica, 2016](#)¹⁰, p.xxi).

Fundamentally the challenge for schools is how to prepare young people for a world in which digital technology, in the form of artificial intelligence (AI), is able to perform many of the things which previously were thought of as being indicators of human intelligence. In part this is because we are confusing knowledge with information when we talk about a knowledge based curriculum. Knowing, in the sense of being able to remember or even being able to explain or manipulate information, is a subset of knowledge, but is what a knowledge based curriculum focusses on. The problem is that:

"AI is brilliant at performing the routine cognitive skills of knowledge acquisition. The information that can be processed and learned by readily available machine-learning systems are way beyond our human capability."

([Luckin 2018](#)¹¹, p.99)

In other words, a knowledge based curriculum focusses on teaching something that humans cannot do as well as AI. It sets us up to become subservient to AI systems rather than being controllers of them. This has huge implications for society, including for people's employability.

The alternative to a knowledge based curriculum

The danger with a knowledge based curriculum is that you can learn about information without developing many of the critical competences that AI is not good at. Luckin suggests that these include 'meta-level' intelligence - knowing about ourselves.

Knowledge remains important, because you cannot develop these other attributes in a vacuum - you can only do so through an interaction with information. So you cannot have a 'skills based' approach without developing your knowledge, though you can have a knowledge based approach without developing key competences that differentiate us from AI systems.

To illustrate the point. I can learn some facts about Australian history and explain how Australian culture has evolved in the light of those facts without developing the ability to think critically, evaluate evidence or understand the human aspects of Australian history. In contrast, if I am learning to compare the quality of different information, critically analyse it and understand it from alternative perspective through a study of Australian history I will also be engaging with and processing information. Such a 'skills based' approach is likely to enhance my understanding of Australian history compared with a knowledge focussed one as well as developing additional attributes that will stand me in good stead in the competition against AI.

Continuing to focus on a knowledge based curriculum dooms young people to a future in which they are unable to compete both with other people who have been taught to develop their meta-level intelligence and with 'robots' (AI systems).

Schools need to do better than that.



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⁹ <https://halfbaked.education/21st-century-skills/>

¹⁰ <https://www.amazon.co.uk/gp/product/0143108069/>

¹¹ <https://www.amazon.co.uk/gp/product/1782772510/>

¹² <https://creativecommons.org/licenses/by-nc/3.0/>