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# Thinking about Thinking

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How can education rise to the massive challenges young people will face?

By George Monbiot, published in the Guardian 8<sup>th</sup> July 2023

“From one day to the next, our profession was wiped out. We woke up and discovered our skills were redundant.” This is what two successful graphic designers told me about the impact of AI. The old promise – creative workers would be better protected than others from mechanisation – imploded overnight. If visual artists can be replaced by machines, who is safe?

There’s no talk of a “just transition” for graphic designers, or the other professions about to be destroyed. And while there’s plenty of talk about how education might change, little has been done to equip students for a world whose conditions shift so fast. It’s not just at work that young people will confront sudden changes of state. They are also likely to witness cascading environmental breakdown and the collapse of certain human-made systems.

Why are we so unprepared? Why do we manage our lives so badly? Why are we so adept at material innovation, but so inept at creating a society in which everyone can thrive? Why do we rush to bail out the banks but stand and gawp while Earth systems collapse? Why do we permit psychopaths to govern us? Why do blatant lies spread like wildfire? Why are we better at [navigating work relationships](#) than intimate ones? What is lacking in our education that leaves such chasms in our lives?

The word education [partly derives from](#) the Latin [educere](#): to lead out. Too often it leads us in: into old ways of thinking, into dying professions, into the planet-eating system called business as usual. Too seldom does it lead us out of our cognitive and emotional loops, out of conformity with a political and economic system that’s killing us.

I don’t claim to have definitive answers. But I believe certain principles would help. One is

that rigidity is lethal. Any aspect of an education system that locks pupils in to fixed patterns of thought and action will enhance their vulnerability to rapid and massive change. For instance, there could be no worse preparation for life than England's Standard Assessment Tests, which dominate year 6 teaching. If the testimony of other parents I know is representative, SATs are a **crushing experience** for the majority of pupils, snuffing out enthusiasm, forcing them down a narrow, fenced track and demanding rigidity just as their minds are seeking to blossom and expand.

The **extreme demands**, throughout our schooling, of tests and exams reduce the scope of our thinking. The exam system creates artificial borders, fiercely patrolled, between academic subjects. There are no such boundaries in nature. If our interdisciplinary thinking is weak, if we keep failing to see the bigger picture, it is partly because we have been trained so brutally to compartmentalise.

Education, to the greatest extent possible, should be joyful and delightful, not only because joy and delight are essential to our wellbeing, but also because we are more likely to withstand major change if we see acquiring new knowledge and skills as a fascinating challenge, not a looming threat.

There are arguments for and against a national curriculum. It's a leveller, ensuring everyone is exposed to common standards of literacy and numeracy. It provides a defence against crank teachings such as creationism and Holocaust denial. It permits continuity when teachers leave their jobs, and a clear knowledge path from year to year. But it is highly susceptible to the crank teachings of politicians, such as the Westminster government's insistence on drilling young children in abstruse grammatical rules, and its **ridiculous tick-lists** of sequential learning tasks.

When we are taught broadly the same things in broadly the same way, we lose the resilience diversity affords. What the teachers I speak to regret most is the lack of time. The intense combined demands of the curriculum and the testing regime leave almost no time to respond to opportunities and events, or for children to develop their own interests. One teacher remarked that if a pterodactyl landed on the school roof, the children would be told to ignore it so they could finish their allotted task.

If we are to retain a national curriculum, there are certain topics it should surely cover. For instance, many students will complete their education without ever being taught the principles of complex systems. Yet everything of importance to us (the brain, body, society, ecosystems, the atmosphere, oceans, finance, the economy ... ) is a complex system.

Complex systems operate on radically different principles from either simple systems or complicated systems (such as car engines). When we don't understand these principles, their behaviour takes us by surprise. The two existential threats I would place at the top of my list, ranked by a combination of likelihood, impact and imminence, are environmental breakdown and [global food system collapse](#). Both involve complex systems being pushed beyond their critical thresholds.

Instead of enforcing boundaries between subjects, a curriculum should break them down. This is what the [International Baccalaureate](#) does. I believe this option should be available in [every school](#).

Above all, our ability to adapt to massive change depends on what practitioners call “metacognition” and “meta-skills”. Metacognition means thinking about thinking. In a [brilliant essay](#) for the Journal of Academic Perspectives, Natasha Robson argues that while metacognition is implicit in current teaching – “show your working”, “justify your arguments” – it should be explicit and sustained. Schoolchildren should be taught to understand how thinking works, from neuroscience to cultural conditioning; how to observe and interrogate their thought processes; and how and why they might become vulnerable to disinformation and exploitation. Self-awareness could turn out to be the most important topic of all.

Meta-skills are the overarching aptitudes – such as self-development, social intelligence, openness, resilience and creativity – that help us acquire the new competencies that sudden change demands. Like metacognition, meta-skills can be taught. Unfortunately, some public bodies are trapped in the bleak and narrow instrumentalism we need to transcend. For example, after identifying empathy as a crucial meta-skill, [a manual](#) by Skills Development Scotland reports that: “Empathy has been identified as a key differentiator for business success, with companies such as Facebook, Google and Unilever being recognised as excelling in this area.” I've seldom read a more depressing sentence.

Schooling alone will not be enough to lead us out of the many crises and disasters we now face. Those who are adult today must take responsibility for confronting them. But it should at least lend us a torch.

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