

Learning to learn: a key goal in a 21st century curriculum

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'The thing that I'm scared of is, say I got laid off, I've got nothing, nothing to help me get another job...I've got no other skill.'

Todd, aged 18, bricklayer

'I guess I could call myself smart. I can usually get good grades. Sometimes I worry, though, that I'm just a tape recorder...I worry that once I'm out of school and people don't keep handing me information with questions, I'll be lost.'

Emily, aged 15, GCSE student

much as the more conspicuous failures of the education system such as Todd. Emily sees herself as ready for a life of tests, but not the tests of life. Todd does not even believe that he has it in him to master a new skill.

They differ greatly in how literate and numerate they are, but Emily and Todd are both, in their different ways, *illlearnerate*. They do not think of themselves as effective real-life learners. They think that school has not only failed to give them what they need, it has actually compounded the problem. Many young people live in a *Matrix* world in which there is often no consensual reality, no agreement about what to do for the best, and in which nobody taught them what to do when they didn't know what to do. Their culture of 'cool' is, in part, a reaction to their sense of inadequacy and insecurity in the face of real difficulty. Young people want more real-life gumption, more initiative, more stickability, just as prospective employers and anxious governments do. More fundamental even than the concern with literacy and numeracy is the need to protect and develop young people's *learnacy*.ⁱ

Government reforms have tinkered with existing provisions and structures in dozens of ways: the timetable, the curriculum, the assessment methods and so on. Such tinkering has been going on for a long time, but it does not seem to have healed the hole in the heart of education that young people experience so keenly. However recent developments in the human sciences are beginning to fire people's imaginations. One of these is that it is actually possible to help young people become better learners – not just in the sense of getting better qualifications, but in real-life terms. Ideas from cognitive psychology, neuroscience and cultural psychology, for example, are converging on a rich set of ideas about what 'learning to learn' involves, and how it can be taught.

In cognitive science a revolution has taken place in the way we think of 'intelligence'. For a while people believed that intelligence was a fixed-sized dollop of general-purpose mental resource provided by God or your genes when you were born, that set a ceiling on what you could achieve. We now know that this model is scientifically indefensible, factually incorrect and educationally pernicious. It is indefensible because, twins studies notwithstanding, you cannot separate nature and nurture in that way. It is incorrect because everyone's intelligence varies enormously across time and place, and IQ scores bear no relation to being real-life smart. It is pernicious because it leads people to feel stupid and ashamed (rather than challenged) when they find things difficult, and therefore it undermines their ambition and determination.

In fact there is enormous room for everyone to get smarter by developing their *learnacy*. Even if there were some hypothetical limit on my ability, in practice I am nowhere near it. True, I am never going to be as fit and strong as Matthew Pinsent, nor as fast and tough as Kelly Holmes, but that does not mean that it is a waste of time my going to the gym. And when I do go, the whole point is to find it *hard*. Pushing myself need not mean 'I'm hopelessly unfit – and that's that'; it shows me that I'm in the process of getting fitter. Jean Piaget first defined intelligence as 'knowing what to do when you don't know what to do'. Lauren Resnick now defines intelligence simply as 'the sum total of your habits of mind'. And habits grow and change.ⁱⁱ

This work is also showing that growing more intelligent is not just a matter of learning a few techniques or mastering some new skills. It is more to do with attitudes, beliefs, emotional tolerances and values. These change, but more slowly than 'skills', and schools and classrooms have systematic, cumulative influence upon them. When teachers



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There are two good reasons for reconfiguring 21st century education: economic and personal. The well-rehearsed economic argument says

that knowledge is changing so fast that we cannot give young people what they will need to know, because we do not know what it will be. Instead we should be helping them to develop supple and nimble minds, so that they will be able to learn whatever they need to. If we can achieve that, we will have a world-class workforce comprising people who are innovative and resourceful. The personal argument reaches the same conclusion. Many young people are floundering in the face of the complexities and uncertainties of contemporary life: the relatively successful children like Emily, as

encourage their students to talk more about the process of learning, their attitudes change and their achievements improve within a term.ⁱⁱⁱ

From neuroscience comes the realisation that we are all born with brains that are ready, willing and able to sieve useful patterns out of experience and turn them into practical expertise, and to do so without any external supervision.^{iv} Some of the most powerful of these discovered tools amplify the process of learning itself. The brain learns to become more sophisticated at, for example, investigating, memorising, researching, deducing and imagining, and in doing so bootstraps the natural learning ability with which it was genetically endowed. We are born powerful learners and have the capacity to become more so.

Our most powerful source of ideas about how to be a better learner, of course, is other people – and this where sociocultural studies in the tradition of Lev Vygotsky prove their worth. They show that we transmit our own learning habits and values to young people not so much through what we teach explicitly, as through the ways we act and talk around them. Children are inveterate eavesdroppers and spectators, and they osmose habits of mind from their elders, and from each other, without even thinking about it. In fact it even looks as if the brain is designed to prime itself to copy what it sees other humans doing. Much more than we might think, our minds are constituted out of the habits and values that permeate our social milieu.^v

Children learn what to notice, what to ignore, what to laugh at, what to be afraid of and what's worth investigating. And they also pick up on how to respond to uncertainty – what to do (and how to feel) when they don't know what to do. From this point of view, the way a teacher reacts when a well-planned lesson inexplicably goes wrong is at least as relevant to students' development as the lesson content. If teachers never let their students see them being learners, but only as *know-ers* (at worst, anxious and dogmatic knowers) they are depriving the students of vital vicarious experience. Helping young people become better

learners may mean daring to give up the belief that a teacher's top responsibility is to be omniscient.

Does the intention to build young people's learning power mean that we no longer care about the content of the curriculum? Obviously not – despite the almost wilfully facile polarisation of some commentators^{vi} learners must have interesting things to learn *about*, and it is impossible to teach anything without encouraging the development of some learning habits (passive compliance, say) at the expense of others (critical questioning). Content and process are the warp and weft of the curriculum. It's only a matter of how explicit and thoughtful we are about whether we are weaving the weft that young people will actually need when they leave school. We simply have to take care that, while we are helping our students to learn how to calculate compound interest, or write a poem, or think about the reasons for famine, we are *also* helping them to develop into more confident, curious and capable learners. We can help them develop the confidence to ask questions, to think carefully, and to know when and how to make productive use of their intuition and imagination. We can start building resilience by making difficulty more interesting and confusion less shameful, and we can encourage reflection by modelling what reflective learning looks like. And so on.^{vii}

If different bits of equipment in the gym exercise complementary facets of 'fitness' – the treadmill for stamina, dumb-bells for strength, stretches for flexibility – how do the different components of the school curriculum contribute to the development of all-round learning power? Which mental muscle groups are specifically exercised by maths, or history or music? Can favourite topics defend their place if looked at in this light? Does adding fractions stretch children's minds in a way that titrating acids and bases can't? How can we help students not just to learn algebra or the periodic table, but learn to learn like a mathematician, a scientist or a playwright?^{viii}

When we look at the curriculum as a whole, both across subjects and across years, does it provide the cumulative,

comprehensive mental exercise regime that will serve both Emily and Todd in years to come? That's the question. It's not a matter of liberal waffle; it's a matter of clear-eyed attention to what it takes to flourish in the midst of the complex personal uncertainties of the mid-21st century – and of remembering that, if we really go back to basics, and do not make the mistake of getting sidetracked by the surrogate concern with tests and qualifications, that is what education is actually about.

Notes

This paper is based on my chapter 'Learning is learnable (and we ought to teach it)' in Sir John Cassels (ed), *Learning to succeed: the next decade*, University of Brighton, 2003.

- i *Speaking up, speaking out! The 2020 vision programme research report*, The Industrial Society, London, 1997.
- ii Perkins, D, *Smart schools: better thinking and learning for every child*, Free Press, New York, 1995.
- iii Watkins, C, Learning about learning enhances performance, *Research Bulletin No. 13*, National School Improvement Network (info@nsin.org), 2001.
- iv One has to tread carefully here, for a great deal of nonsense is being talked about the implications of brain science for education. It is not true that playing your baby Mozart will make her smarter, nor that your child's brain will dry up if is not continually drip-fed water from a fancy bottle, though some people will try to tell you otherwise. For a critique, see Bruer, J, Chapter 26, 'Education and the brain: a bridge too far', *Educational Researcher*, 1997, pages 1–13.
- v See for example Bruner, J, *The culture of education*, Harvard University Press, Cambridge, Mass., 1996; Gordon Wells and Guy Claxton (eds), *Learning for life in the 21st century: sociocultural perspectives on the future of education*, Blackwells, Oxford, 2002.
- vi Woodhead, C, 'Cranks, claptrap and cowardice', *The Daily Telegraph*, 2 March 2001.
- vii The practicalities of teaching for learning are addressed in my *Building learning power: helping young people become better learners*, TLO Ltd: Bristol, 2002 www.buildinglearningpower.co.uk.
- viii See for example Claxton, G, Chapter 24, 'Mathematics and the mind gym: how subject teaching develops a learning mentality', *For the Learning of Mathematics*, 2004, pages 27–32.

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