

**THE VIRTUES OF UNCERTAINTY:
A SOLID EDUCATION FOR THE LEARNING AGE**

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We seem to live in a morally bashful age. Perish the thought that anyone might try to 'impose their values' on anyone else. Trying to 'adopt the moral high ground' sounds, to modern ears, arrogant or hubristic. You risk becoming a figure of fun like a Speakers' Corner tub-thumper.

Education colludes with this squeamishness by pretending that the only serious questions it faces are technical ones. How are we going to raise standards? What are the most appropriate methods for testing students, and when, and how much? Should we have an 'English Baccalaureate', or a six-term year?

But this coyness is both weasely and pusillanimous. Education is essentially a moral enterprise. Whether overtly or covertly, every aspect of a school system is riddled with value judgements about what is worth knowing, and what kinds of young people we are trying to turn out. Words like 'standards' and 'appropriate' merely finesse the underlying moral questions. They have only the appearance of neutrality, for we just have to ask 'Standards of *what?*' and 'Appropriate to *what end?*' and their value-laden nature is hauled to the surface. Only if we assume that 'standards' refer, self-evidently, to performance on national tests – with a

sprinkling of statistics about 'attendance', and 'exclusions' - do the moral questions seem to disappear.

Despite occasional bursts of rhetoric about developing that mysterious beast 'the world class workforce' or not, the goal of most education ministers turns out, *de facto*, to be to beat Singapore or Finland in the PISA tables: in other words, to keep trying to rack up the test scores, without stopping to think what those scores are meant to be indicators of. Examination results are proxies for our underlying values and intentions, not ends in themselves. Most of what kids learn in school they forget within weeks of having taken the test. As Einstein said, 'Education is what is left after you have forgotten everything you learned in school'. So what *are* the valuable residues of those 12 long years, which we want all our young people to gain? On this question, there is, from many current governments, a deafening silence - or, at best, a feeble voice saying 'A place at your chosen university' - as if this were something to which all students should aspire (despite the fact the fact there are places for only just over half of them).

And teachers sometimes struggle to do better. I give a lot of talks to headteachers, and I often pose them this question. You run into a young man who left your (let's say) secondary school a couple of years ago, and he stops you and, out of the blue, thanks you for the wonderful education you gave him. You are puzzled, because you recall that he only scraped two poor GCSEs - but then you suggest that he must be referring to the friendships he made, or to his part in the very successful school production of *War Horse*. True, he says, but that's not what I meant - I was talking about the core *education* I got. And now you really are at a loss, and you ask him what he means. What does he say?

What would your answer be? You might like to have a think before we go on. Because if we don't have a good clear answer, and are not doing everything we can to help those low-achievers get whatever-it-is, I think we are morally lazy, and probably corrupt - don't you? If, after 100 years of tinkering and innovation, half of all young people still don't get a clutch of good GCSEs; if millions of school-leavers still can't read well; if thousands of students vote with their feet every day - not because they are inherently lazy or stupid, but because they can see no value in what school is offering - you might have thought that a slightly deeper look at aims and values was timely.

The idea that schools are more or less as they must be, and it is just a shame that so many youngsters lack the ability (or sometimes the will) to do well at them, is an anachronism -an apology for the *status quo* - that has been shot

dead by the contemporary science of intelligence. Genes establish only a wide envelope of intellectual development; where you end up is determined largely by experience. The doyenne of American intelligence researchers, Lauren Resnick, now defines intelligence merely as 'the sum total of one's habits of mind'. Ability is not fixed, it is elastic, and your environment either stretches it or not. If teachers believe in 'that stupid old theory of (fixed) intelligence', they won't look for ways to stretch it - and the belief becomes a self-fulfilling prophecy.

Actually, it's worse than that. If youngsters pick up the belief in fixed ability, like a computer virus, the self-fulfilling prophecy gets installed in their own minds. Studies by another eminent American researcher, Stanford's Carol Dweck, have shown that this virus damages students' own ability to learn. They come to think that failure is a reflection of lack of ability - so they stop thinking and trying. If you simply have not got what it takes, you would be daft to invest effort that is by definition going to be futile - right?

If you have been taught to think of yourself as 'low ability', it's obvious that your life chances are going to be damaged and dampened. For the many youngsters who come out of school convinced that they are bad at learning, the social and economic as well as the personal costs are incalculable, and unforgiveable. But high-achievers with this virus suffer too. The student counsellors at Oxford and Cambridge are seeing a growing procession of unhappy undergraduates who feel fraudulent - and therefore anxious or depressed - when the work get harder and they start to struggle. They feel they have been helped to get somewhere they do not really deserve to be - because when they have to struggle, they feel not challenged but stupid. They have not learned how to 'flounder intelligently'; indeed, they have been systematically *deprived* of opportunities to learn how to be resilient and resourceful by well-intentioned teachers who have spoon-fed, coaxed and cajoled them into those precious three or four As at A level.

The fact is, education has always been about more than knowledge manipulation and test scores. It is also, inevitably, about the formation of character. Schools are cultures that are saturated with values: who to admire; what to respect; what is worth knowing; who has a right to question what; where is the line between imagination and silliness, or teasing and bullying; and so on. And it is not in the School Rules that these judgements live; it is in the minutiae of daily interactions with teachers and older students, who demonstrate through their behaviour and their expressions what is worth noticing and what is to be treated with silent contempt; what is 'cool' and what is 'babyish'; what is 'funny' and what is 'insolent'.

Inevitably, some habits are valued and encouraged, and others disdained or ignored. To be a school student is to undergo a protracted social apprenticeship. If, by our actions, we repeatedly value 'politeness' over 'creativity', or 'being correct' over 'trying something new', that is a value choice, and, as we cannot avoid it, it behoves all of us in education to make these choices consciously and thoughtfully, in the light of a coherent sense of the purpose of education in and for the 21st century. What kinds of adults does a nation want its children to become: not just with what knowledge and skills, but with what dispositions and interests and concerns, do we want them to grow up? And that means being clear and up-front about which qualities of mind we don't think matter so much. Dropping Dickens in favour of J.K. Rowling is not the point; it is, do we, by our actions, value 'neatness' over 'discerning consumption of internet-based information', or favour 'resilience' over 'honour'? That's the debate that is missing. And in its absence, ministers tinker with the peripherals, trying to make marginally more efficient a system that may not – as many people are now saying – be fit for purpose at all.

In the 19th century, they didn't pussy-foot around. The public schools talked happily of developing qualities for the leaders of the future such as team spirit, fair play, judgement and rationality. They produced people who could outwit an enemy, conduct a trial, preach a sermon and hold their own at High Table in a discussion of arcane subjects. (I remember one such debate over dinner at an Oxford college, not at all out of the ordinary, that ran for over an hour, about the keeping of archives in Byzantium.) And it was naturally assumed that, as we only needed so many Leaders and a great many more Followers, so mass education (for the Followers) sought to develop a complementary character: obedient, punctual, punctilious, honest, tidy and clean, as well as possessing a degree of basic literacy and numeracy.

Nowadays, quite rightly, we no longer want to be associated with a school system that sorted children so obviously and so divisively into potential 'winners' and 'losers', and trained their characters differentially, and so we have become nervous about talking about character-formation at all. But the problem was not in talking about character *per se*. It was only the particular sets of valued characteristics that needed challenging and updating. And, as you cannot actually opt out of the character debate – you can't not be in the character-forming business – the only question is: What characteristics are we going to value, and how are we going to cultivate them – not just at the level of rhetoric and fond hopes, but deliberately, systematically and demonstrably?

Broadly, contemporary societies seem to care about three things: national prosperity, social cohesion and stability, and personal well-being. But the personal attitudes that will lead towards these three 'goods' are not eternal; they depend on the nature of the world. So even if those three desirables are taken for granted, educational values – the traits that we want to develop in young people – will vary. We need to think about the world in which we want our children to flourish, before we can say what qualities they are likely to need. Education should not be driven by a dogmatically-held set of 'eternal verities', but by a clear-sighted look at what the demands, uncertainties, risks and opportunities of the future will be. Merely to assert the value of Latin translation or the Periodic Table, in the face of these challenges, is a cop-out. It is a refusal to do the intellectual, moral and imaginative work that is needed.

There are a good many places and organisations around the world where this re-imagining of education has started to take place. In the last ten years, some specifications have been produced by individual schools; some by national education systems; some by researchers in the rapidly growing fields of positive psychology and the learning sciences; and some by commercial or not-for-profit organisations. Wellington College balances the five 'core values' of kindness, courage, integrity, respect and responsibility with the 'eight aptitudes of learning' (derived from Howard Gardner's well-known theory of 'multiple intelligences'): linguistic, logical, cultural, physical, spiritual, moral, personal and social. New Zealand wants all young Kiwis to become 'confident, connected, actively involved lifelong learners'. Singapore is committed to producing youngsters who are 'creative and imaginative' and 'able to think, reason and deal confidently with the future'. In 2009 the lower secondary curriculum in England was reorganised to create young people who would be 'independent enquirers, effective participants, reflective learners, team workers, self-managers and creative thinkers'.

Organisations like the International Baccalaureate have developed a set of desirable traits they call the Learner Profile. It wants all students to develop the dispositions to be 'naturally curious, to exercise initiative, to express ideas confidently, to approach unfamiliar situations without anxiety, to show integrity and honesty, to be sensitive towards the needs and feelings of others, to be open-minded, to be well-balanced, and to be reflective'. An off-shoot of Martin Seligman's Positive Psychology movement called Values in Action (ViA) names 24 'character strength and virtues' on which education should be based.

Everyone, it seems, has a little list these days. Though they may call the items by different names such as 21st century skills, soft skills, key competencies, habits of mind, learning dispositions, or, indeed character strengths and virtues, there is a good deal of international overlap in their content. Broadly, there are two sets of widely-agreed virtues which we might call the *prosocial* and the *epistemic*. The prosocial virtues tend to include honesty, trustworthiness, tolerance, conviviality, kindness, lack of hubris and ecological responsibility. They recognise the globalised and multi-cultural nature of the modern world, and stress virtues of social harmony, as well as those of the responsible employee. The set of such values borrows from, but also differs from the virtues of the 19th century. Deference and cleanliness tend not to appear these days. (I heard someone recently suggest that the fundamental purpose of education today is to produce young people who will want to look after us when we are old. A bit lop-sided, perhaps, but indicative of the prosocial virtues we need to be thinking about.)

But it is the other set, the epistemic virtues, that would have been unrecognisable in both the Eton College and the Bash Street Elementary School of a hundred years ago. This new set of valued outcomes of schooling is deeply responsive to the turbulent global and digital world in which children find themselves. They are focused on uncertainty and the need to learn, and are increasingly seen as relevant to all young people, not just to one subset or another. 'Epistemic' means roughly 'to do with thinking, learning and knowing'.

It is a cliché that we live in times of escalating uncertainty, complexity, ambiguity, choice and individual responsibility. Through the electronic media children are bombarded daily with conflicting models of what to value and how to live, and their communities often offer little strong, unanimous guidance about how to choose wisely – or little they are willing to heed. It is also increasingly obvious that young people (especially in the UK, according to a recent Unesco report) are not coping well with this freedom and diversity. Classic symptoms of stress are high – escapism, recklessness, drug abuse, anxiety, depression, self-doubt – across the whole social spectrum. If stress reflects a widening gap between the demands of one's life and the resources one has to cope, clearly many young people are feeling badly under-resourced. As the core function of education is precisely to develop in young people the mental and emotional resources they will need to cope well with the real demands of their real lives, it is clearly not doing its job. Those resources are psychological, as much as they are material or social. We do indeed need to be talking about what they are.

Sadly, these vital national and global conversations are still at a vulnerable stage of their development. As rapidly as these lists of honourable aims emerge, so they seem to get side-lined. Cynics find them easy to poke fun at. They assume that, because it is hard to operationalize such good intentions, they are intrinsically laughable. Teachers are sometimes bewildered as to exactly what is being asked of them. 'How, exactly, are you asking me to be different?' is a question that has rarely been given a good answer. The language in which these aspirations are couched has often been vague and hifalutin. Not many parents immediately resonate with the need for their children to develop 'metacognitive awareness' or 'autonomous agency'.

And rightwards shifts of governments, conspicuously in New Zealand, England and some of the states of Australia, have not rescinded these brave attempts so much as swamped them with a tide of talk about standards, levels, and 'back to basics'. (Actually they never go *right* back to basics, to debate the real point of schools; they get stuck in a time-warp mezzanine of obsessions with literacy, numeracy, tests and qualifications.) Of course it is more difficult to demonstrate growth in a young person's kindness or their ability to concentrate, than it is to give them a score on sums or reading. And of course some of the pioneering attempts to update the character curriculum for the 21st century have indeed been a bit woolly or grandiose. But, as my dad used to say, if a job's worth doing, it is worth (at first) doing badly. And learning from your mistakes, and gradually doing it better. That is the stage we are in right now, as we tinker our way towards a genuinely 21st century education.

One of the things we have learned is that getting the language right *is* important. Character aspirations are often phrased so vaguely that no-one could possibly disagree – but at the unacceptable cost of no-one knowing what they really mean either. Does 'respecting the environment' mean lobbying the G8? Demanding James Lovelock come and talk to the school? Insisting that school-meals are organic? Or merely watching *An Inconvenient Truth*, not dropping litter, and grudging trips to the bottle-bank? Is it always a good idea to 'approach unfamiliar situations without anxiety'? Throwing rocks at an old bomb on a beach is not so smart. Is it always good to 'persist in the face of difficulty'? I certainly wish I had learned earlier in my life that it was OK to leave unrewarding books unfinished. Determination is a good resource to have when you need it, but 'Thou shalt (always) persist' is not a good commandment. The virtues we want for children have to be clearly enough expressed so that they can think about them, not just obey them, and can easily relate them to their own experience.

If education is to change, it will not be by government *fiat*; it will be because thousands of young people and their families understand the value of the changes and start to demand them with greater urgency. We need to talk much more about why kindness, tolerance and patience are virtues, and 'what's in it for them' to cultivate those habits of mind. Being grateful and kind are strongly correlated with measures of well-being and life satisfaction. Crudely, nicer people are happier people. Everyone needs to know that. And it helps to talk about kindness and patience, not compassion and delayed gratification.

More urgently still, we need good ways of talking about epistemic virtues: the habits and qualities of mind that make someone a confident, powerful learner (and words like 'prosocial' and 'epistemic' are not the right ones to use on parents' evenings). A school needs an agreed vocabulary for talking about the tolerances, interests and habits of mind that are the bare necessities, if its students are to flourish in the midst of uncertainty. It is impossible to 'improve' the running of schools unless we have a clear idea of what those virtues are. Without that clarity, all educational innovation falls back obsessively on 'raising standards' as traditionally, and inadequately, defined.

In my book *What's the Point of School?* I had a stab at describing the virtues that make people good at coping with uncertainty and complexity. Some of them are drawn from the research that lies behind positive psychology; some are derived from asking teachers and young people themselves; some are suggested by the burgeoning literature of the learning sciences. I suggest there might be eight, more or less, of such 'learning virtues'. They are: curiosity, courage, exploration, experimentation, imagination, discipline, sociability and mindfulness. Each of these, in turn, comprises a number of sub-dispositions that I shall illustrate briefly.

It's School Gym, but Not as We Know It...

Once upon a time, a village became worried about the fitness of its children, so the villagers built a brand new gymnasium, and filled it with all the latest equipment. They had Cross-trainers, and Steppers, and Pecs Machines, and Dumb-bells, and loads more.

Every day, after school, the children would walk down to the Gym, sit quietly on the floor, and learn about the equipment. They studied the history of the Cross-trainer and the construction of the Pecs Machine, and they calculated the weight of the Dumb-bells. Every so often they were tested on the knowledge they had gained, and they did pretty well (except for a Long Tail of children who didn't). But to the puzzlement of the villagers, they did not seem to be getting any fitter.

So they sought high and low and appointed a new director of the Gymnasium. He was called the Grand Operational Visionary Executive, and he instantly saw what the problem was. "Tut, tut," said the GOVE, "you have been using quite the wrong equipment. I have been to visit a people called the Ebak who live in a far-away land, and I can tell you that those new-fangled machines will never build the kind of fitness our young people need. The Ebak have the solution. You need to replace those tinny machines with Tried and Trusted equipment that has stood the test of time". So out went the Pecs Machine and the Stepper, and in came big old-fashioned Medicine Balls, and Skipping Ropes, and a lovely old Vaulting Horse. The GOVE kept the Dumb-bells, because their value was beyond question.

And every day, after school, the children walked down to the Gym, and they sat quietly on the floor, and they studied the history of the Medicine Ball, and they wrote creative stories about the life of the Vaulting Horse, and they measure the strength of the Skipping Rope, and they calculated the weight of the Dumb-bells. And their understanding of the equipment was tested more frequently and more rigorously, and the GOVE found that the test scores went up by a percentage point or two each year, and he was well pleased. But the villagers were puzzled, because no one could understand why the children were still not getting any faster, or stronger, or fitter. And gradually the villagers became less convinced that the GOVE had the answer, and they sacked him, and he slunk off and wandered the land, and eventually found work with a firm of courtiers called McKinsey.

One day a woman wandered in to the village, and asked a passer-by why all the children were so fat and sluggish, and why the grown-ups looked so perplexed and dejected, and they explained their puzzlement, and she went to see the children in the Gym for herself. She said her name was Vita, which didn't stand for anything. She Hummed and Hurred for a bit and then said, 'But they aren't actually *using* the equipment, are they? They aren't really *exercising*.' 'What on earth do you mean?' said the villagers, 'they are studying as hard as they can, and they have some excellent teachers'. Vita said she would show them what she meant, and she stood up, and stripped off her jacket, and started to throw the heavy Medicine Ball up and down in the air until she got red in the face. And she skipped till she was out of breath. And she lifted the Dumb-bells up and down till her arms were so tired they couldn't lift any more.

The villagers were horrified. 'We can't have that,' they cried. 'The children will get upset if we make them struggle like that. They are just not used to getting sweaty and tired. They will feel inadequate, and their self-esteem will suffer – especially the High-Achievers who are really good at Explaining and Remembering and Calculating and Sitting Still.' 'Well, tough,' said Vita. 'If you want them to build up their strength and their fitness, they will just have to. No one ever won the Hundred Metres by writing an essay about it.' And the villagers grudgingly admitted she might have a point.

So every day, after school, the children went down to the Gym, but instead of sitting quietly on the floor, they started to use the equipment to stretch their muscles, and build up their stamina, and reduce their waist-lines, and become more flexible, and develop their coordination. Quite soon the children got used to getting sweaty and hot and tired, and they began to enjoy the experience of being really stretched – even the High-Achievers (though it took longer for them to get the idea). They started to become much more nimble and their stamina and energy increased by leaps and bounds. The villagers were not quite sure what they had unleashed, and they were a little daunted by the children's energy, but they thought it was good.

The school-teachers had a think, and they realised that they had been making the same mistake. They had been teaching their Subjects in a way that made the children Knowledgeable, but not very mentally Fit. They had only been exercised a very narrow set of Mental Muscles like Accurate Transcribing, Verbatim Retention, Mechanical Calculation and Prescriptive Reasoning. They realised that the point of the curriculum wasn't to get the children to be able to solve simultaneous equations, or conjugate irregular verbs, because very few of them would ever need to do that. The point was to use the subject-matter to exercise the children's minds in a host of different and useful ways, so they would be able to learn whatever they needed to learn in the future.

So the teachers stopped Teaching Maths for Maths Sake, and instead used the Maths Exercising Machines to develop mental muscles called Precision Thinking and Checking. And they used the History Exercise Machines to develop powers of Empathising and Deferring Judgement. They used the RE Machines to develop Kindness and Forgiveness. They used the Science Machines to develop a habit of mind called Predict, Observe and Think Again. And they used the English Machines to develop habits Imagination and Reflection. And over time the children became noticeably more resilient and creative and resourceful, and their minds started to become as supple as their bodies.

An important group of villagers called the Employers were very happy indeed. And so were the Teachers, because most of the children had become a pleasure to teach. And so, of course, were the Mums and Dads, because their children were Brighter and Happier – even those who had been called Low-Ability. And they all lived vigorously ever after. Only the GOVE and some of his friends who were called SCIPs, which stood for Stupid Clever and Important People, seemed completely incapable of understanding what had taken place, and why it needed to happen, and kept arguing against what they called 'trendy nonsense'. But nobody was listening anymore; they were having too much fun learning.

and re-drafting, looking at what they've produced – a garden bed, an essay, a melody – and thinking about how they could build on and improve their own products and performances. They don't mind making mistakes (learning matters more than being 'right'), and, as Billie Jean King said, they 'look on losing not as failure but as research'.

Imagination is the virtue of fantasy, of using the inner world as a test-bed for ideas and as a theatre of possibilities. They are at home in the world of 'What If' and make-believe, of playing with possibilities. Good imaginers have the virtue of dreaminess: they know when and how to make use of reverie, how to let ideas 'come to them'. They have a mixture of healthy respect and sceptical appraisal toward their own hunches, intuitions and 'feelings of rightness' (even if they can't justify them yet). They use mental rehearsal to develop their skills and readiness for tricky situations. They like finding links and making connections inside their own minds. They use imagery and metaphor in their thinking. (All this is true of many Nobel science laureates, creative artists and international athletes, for example).

The creativity of imagination needs to be yoked to the virtue of *discipline*; of being able to think carefully, rigorously and methodically, as well as to take the imaginative leap. 'Reason' isn't the be-all and end-all of learning by any means, but the ability to follow a rigorous train of thought, and to spot the holes in someone else's argument, as well as your own, is invaluable. Disciplined learners can create plans and forms of structure and organisation that support their learning – like the Scouts, they can 'be prepared' – but can also stay open to serendipity, and throw away the plan if needs be. Discipline enables knowledge and skill to be used to guide learning, to infuse the painstaking 'crafting' of things that usually needs to follow the 'brainwave'.

The virtue of *sociability*, and of judiciously balancing sociability with solitariness, also seems essential. Effective learners seem to know who to talk to (and who not), and when to talk (and when to keep silent) about their own learning. And they are good members of groups of explorers. They know how to listen, how to take turns, what kinds of contribution are helpful. They have the knack of being able to give their views and hold their own in debate, and at the same time stay open-minded to and respectful of others' views. Collective learning is more important to them than point-scoring. They can give feedback and suggestions skilfully and receive them graciously. They are generous in sharing information, ideas and useful ways of thinking and exploring; and they are keen to pick up useful perspectives and strategies from others.

Finally there is the virtue of *mindfulness*, in the sense of being disposed to reflection and contemplation, taking time to mull things over, take stock and consider alternative strategies and possibilities. Not paralysed by self-consciousness (which is a pitfall) but capable of self-awareness, reflective learners can take a step back every so often and question their own priorities and assumptions. They somehow know the strategic moments when this useful (and are not seduced by the current fad for 'metacognition' which seems to make the mistake of supposing that 'thinking about your own thinking' is always a good thing, which it isn't). Mindfulness means giving yourself the time to go deeper, to see to what conclusions you may have leapt, to let a bigger picture emerge.

You might like to think how this 'little list' could be improved... It is, as I say, merely a provocation, an invitation to argue. I have tried to make it reasonably comprehensive, and at the same time both concrete and accessible. I've tried to phrase it in a way that sounds plausible, hopefully even fruitful, both to 11-year-olds struggling with French and 55-year-olds struggling with Golf or Post-Modernism; to people who think and intellectualise their learning a lot, and those who don't; to people who work at Aardman Animations, Manchester City, Goldman Sachs...and the local hairdresser's, motor mechanic's, or school. I'll have failed, of course, but, as Samuel Beckett said, 'Try again. Fail again. Fail better.'

I think it is important that the virtues of uncertainty are broad enough to apply to a good deal of out-of-school learning. Dealing with the real-time uncertainties of modern life, and developing one's own passionate interests and avocations, are usually not at all like school. The carefully planned, pre-digested, sequenced and graded kinds of bite-size learning in which conventional schooling trades are not the kinds of learning for which young people need to be prepared. An apprenticeship in exam-passing leaves even the most successful with a skill for which there is little call once they have left university. Few job adverts specify that applicants 'must be able to sit still, copy down notes, and regurgitate disembedded chunks of information under pressure'.

If real-world intelligence is a composite of largely learned habits of mind, the virtues of uncertainty, then school can be seen as a kind of Virtue Gym, designed to stretch and strengthen, over time, those elements of 'mental fitness'. (I'm going to focus henceforth on what I called earlier the epistemic virtues. The virtues of good neighbourliness and good citizenship are more familiar – though

the extent to which schools have actually been effective at translating their exhortations into a kind of moral 'second nature' is questionable.)

The big question is: how do we do it? What does it take for schools to become systematic incubators of these learning virtues, so that their students graduate, whatever their grades, with deep-seated habits of curiosity, courage and the rest? To answer this question, we need first to weed out what *doesn't* work. Those moral exhortations (much beloved of headteachers on what used to be called Speech Days) are provenly ineffective. Merely talking about 'character', desirable though that vocabulary is, does not of itself cultivate the sought-after characteristics, any more than sticking labels on a pig's ears, legs and tail helps it to grow. Being able to discuss, defend and even agree with the importance of a particular virtue is no guarantee that one will manifest it in practice. When a group of young people were given tests of their moral reasoning ability, their results did not correlate at all with their actual level of anti-social behaviour, for example. Kids with ASBOs may be perfectly able to 'tell right from wrong'; they just don't choose the 'right' option in the heat of the moment. Knowledge and belief get trumped by habit and impulse all the time.

In general, merely talking about the virtues, whether epistemic or prosocial, doesn't seem to do much good. Being able to talk *about* thinking is not the same thing as being a better thinker, and it may not even be necessary. I have watched lessons in which, for example, youngsters have been parroting back Howard Gardner's Multiple Intelligences - they can tell you what 'body smart' means, and how it differs from 'music smart' - without any evidence that any of them have become the slightest bit more multiply intelligent. We are all, as one of my students put it so eloquently, 'knowledgeable about things we are crap at'.

The second thing that doesn't seem to work, in cultivating these learning habits, is little set-piece workshops or activities that are bolted on to 'business as usual'. Research on Thinking Skills programmes, for example, shows that, whilst such activities are often enjoyed and appreciated by students, their benefits tend neither to last nor to spread to other areas of their learning lives either in or out of school.

One of the problems here is that the virtues are not skills, they are habits or dispositions. Possessing the virtue of curiosity does not just mean that you have the ability to ask good questions when someone prompts you. It means having a questioning frame of mind. The goal of character education cannot be merely to train skills. A skill is something you *can* do; not necessarily something that you

are constitutionally disposed to do. A virtuous school has to be more than a 'training' institution; it has to be an incubator that develops and strengthens the desired qualities of mind through everything it does. It is no use merely tacking on an interesting looking course of 'problem solving' or 'learning to learn' if the other 95% of students' time continues to be spent learning to be passive, credulous and retentive.

The relative ineffectiveness of the skills training approach is exemplified by the disappointing results of the UK Resilience Programme (UKRP). Based on a much-hyped programme designed by the University of Pennsylvania, the package, launched in 2007, comprised a set of lessons and workshops aimed at helping young teenagers become more able to face challenges in school and in their lives. The final evaluation of UKRP by the Department for Education in 2011 found that, on average, any beneficial effect of the workshops lasted only as long as they were continued, and had faded away a year later – except in the case of the most vulnerable and lowest-achieving youngsters. Despite the fact that many students were very positive about the intentions of the programme, there was no measurable impact on their behaviour or on their 'life satisfaction' questionnaire scores. The disappointing impact was put down, by the researchers, to the 'over-didactic' and 'bolt-on' nature of the interventions.

So what can teachers do? For the last 12 years, thousands of teachers, and hundreds of schools, have been investigating what it takes to grow powerful learners. In fact the initiative has come to be known as Building Learning Power (or BLP). Throughout the UK, local authorities as diverse as Solihull, Milton Keynes, Newham, Hampshire and the Isle of Man have all been experimenting with BLP, and there are now also schools using and developing the ideas in Poland, Lithuania, Switzerland, Hungary, Dubai, Malaysia, Australia, New Zealand, Chile and Argentina. What we call the Expansive Education Network is now linking up these centres of exploration and helping them to share the fruits of their own enquiries, and to benefit from each other's.

How do you strengthen youngsters' curiosity? Asking them what puzzles them is a good start. Greet them on a Monday morning by saying, "Who found a really good question over the weekend?" Have a 'wonder wall' full of sticky notes that capture the children's questions. Ask your secondary science class to 'think like scientists' and generate new hypotheses, and new questions, based on the experimental results they have just collected.

What about courage and determination? Encourage students to think of difficulty as a challenge rather than a threat. Don't talk to them as if finding something difficult was a sign of lacking ability. (Darwin and Einstein were both notoriously slow learners. When faced with something genuinely tricky, slow is the most intelligent thing to be!) Don't think you are being kind by rescuing pupils from difficulty and frustration; you are merely reinforcing the idea that 'sticking with difficulty' is fearful rather than exciting.

How do we build the habits and capabilities of the explorer? Teachers have discovered a number of smart ways of building children's powers of concentration. If you give them more resource-based projects, they have to learn how to do their own research and find their own resources. You can encourage them to question the knowledge claims they meet – in textbooks as much as in TV advertisements – and gradually build the habit of respectful, intelligent scepticism about what they read on Wikipedia or in the newspaper. (You can teach 'The Tudors' in a way that builds scepticism, empathy and collaboration – or in a way that builds passivity, credulity and dependence. And if you do it the former way, you get better exam results, as well as kids better-prepared for the 21st century.)

Experimentation? Give students the opportunity to think about how to evaluate and improve work for themselves, both individually and collaboratively. Talk to them about the trials, travails, conflicts and uncertainties that lay behind the discoveries of Galileo and Newton, and the hard work and many drafts that ended in the waste-paper basket on the way to "All the world's a stage", "I wandered lonely as a cloud" or the scripts for *Fawlty Towers* or *The Office*. Science students who are told about these struggles remember information better and use it more effectively to solve problems.

Imagination is a skill that can be taught. Creative people are those who have learned the knack of toggling between linear, purposeful kinds of thought, and those that are more dreamy and imaginative. Schools have been based on bad psychology, where they have presumed that imagination and visualisation are childish or immature 'ways of knowing', to be superseded, as rapidly as possible, by those that are deliberate and articulate. Children can learn, as one little girl put it to me, "to let our brains cool down so they will bubble up with new ideas".

But obviously we need to help students develop the discipline of being able to plan, think things through carefully, anticipate consequences, and apply the painstaking skills of crafting that lead to a satisfying essay, proof, bird-box or painting. American teacher Ron Berger, in his marvellous book *An Ethic of*

Excellence, has shown how even low-achieving or demoralised students can be helped, through the ethos of the school, to develop a craftsmanlike attitude to their work, and a pride in having produced something to the best of their ability.

How do we teach sociability? One teacher I know regularly has her students decide, after being given a task, whether they want to pursue it on their own, with a small group of peers, or in a group with her, the teacher. She gives them a moment to try to anticipate which might suit them best, given that conjunction of demands and resources, and then, afterwards, has them reflect, in their "learning journal" on whether they thought they had made the right choice or not, and why. Another primary school teacher has a class that regularly changes the size and constitution of the groups they are working in because "when we are grown up, we will have to get on with all sorts of people, not just our friends, so we want learn how to do that now".

Finally, how do we teach mindfulness and reflection? Journaling about the ups and downs of their learning lives is one way for pupils to discover the value of reflecting on their experience – taking time to ruminate and, as another student put it, "to suck the juice out of our experience, so we will learn from our choices and mistakes, and so make quicker progress". Through small exercises and gentle reminders, a teacher can get her students into the habit of regularly standing back, taking stock, and thinking about what they are doing – useful life skills in anybody's book.

The beauty is: any teacher could make these small adjustments to their modus operandi. It does not involve chucking out Shakespeare in order to make time for some nebulous new subject called 'learning to learn'. Learning to learn, in these classrooms, becomes a kind of underlay to the more explicitly patterned subject-matter. To suppose that showing interest in the quality of this underlay means ignoring or disdaining the quality of the carpet is just a silly category mistake – yet it is one that many traditionalists seem determined to keep on making. It doesn't say much for our education system, it seems to me, if it produces clever, articulate people who are inclined to rubbish anything they do not immediately understand

And the fact of the matter is: when students are helped to become more confident and articulate about the process of learning itself, they do better, not worse, on the tests. Young people who have been helped to know how to think and persist take these strengths with them into the examination hall, as well as onto the sports field or the concert stage. As one authoritative review of research

by Chris Watkins has said, "for more than 20 years we have known that students with more elaborated conceptions of learning do better in public examinations at age 16." With a hundred kinds of small adjustment to the milieu of schools and classrooms, we can produce young people who are more confident, capable and enthusiastic about engaging intelligently with difficult things – and who do better on the tests. Really: what's not to like?