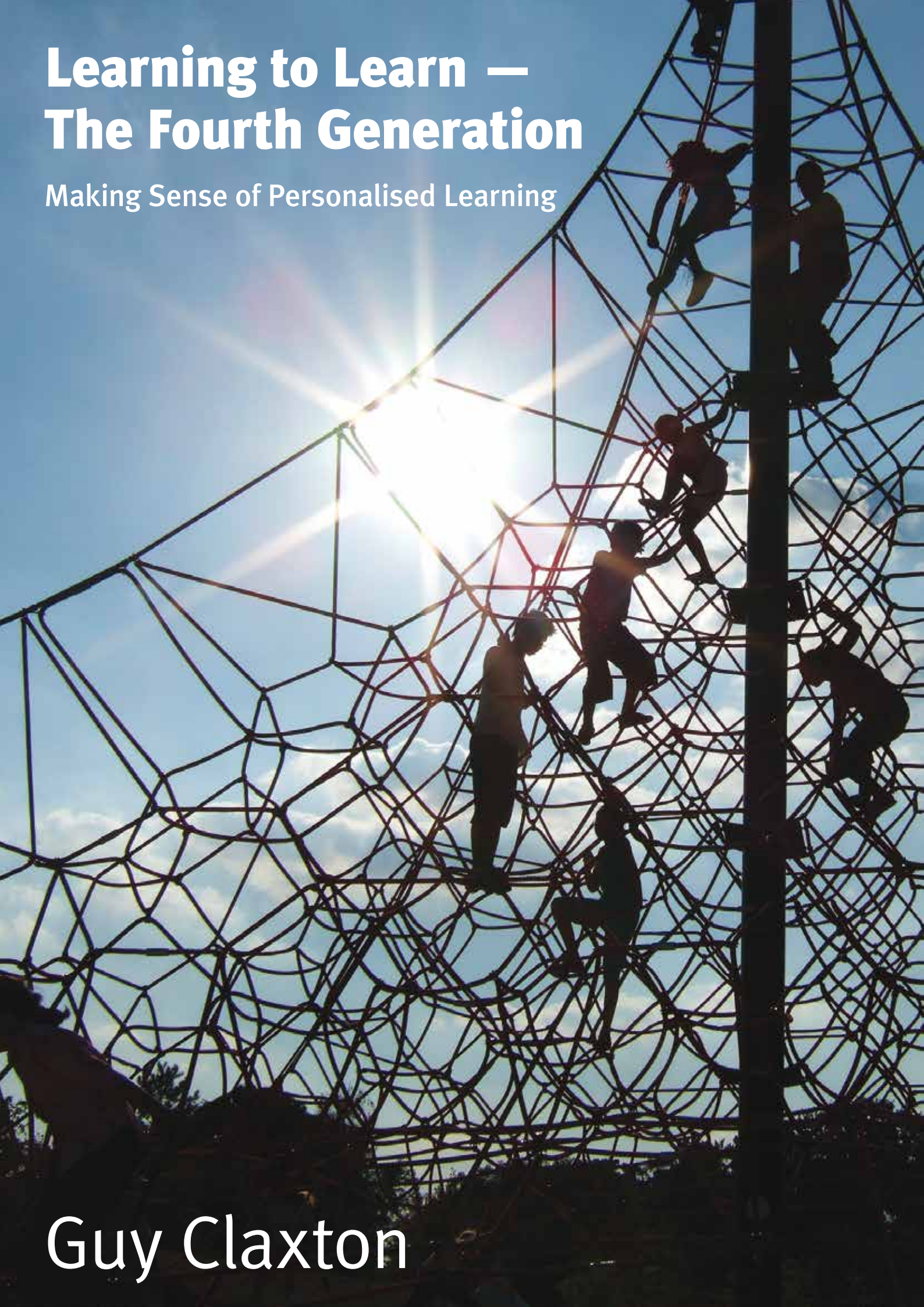


Learning to Learn — The Fourth Generation

Making Sense of Personalised Learning



Guy Claxton

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1 Introduction

'Learning' seems to be very popular at the moment. Everywhere you go, people are talking about 'personalising learning', 'improving learning', 'lifelong learning', the 'learning society', 'learning to learn' and so on. In 2003, the then Schools Minister, David Miliband, declared that 'learning how to learn in preparation for a lifetime of change' was one of the three core functions of teaching in the twenty-first century.¹ Estyn, the Welsh Schools Inspectorate, has recently insisted that 'schools will need to devote attention to developing ... the dispositions of learners, and their learning skills, as well as to developing formal instruction.'² Almost every school prospectus starts with some fine words about 'preparing our young people for a lifetime of learning'. Teachers flock to courses on 'accelerated learning', 'brain-based learning', 'building learning power', 'teaching critical thinking', and the like. There is no doubting the widespread enthusiasm for the idea of 'improving students' learning' throughout the UK — indeed, around the world.

But what exactly is it that everyone is so enthusiastic about? What, in practice, do people mean when they use these fine phrases? And how has teachers' hunger for ideas and information about 'teaching' and 'personalising' learning been met? It is time to take stock of 'learning to learn', and see how the idea has developed, what shortcomings have been rectified, and what remain, and how the idea might be improved still further.

I shall argue that there have, over the last twenty years or so, been three generations of response, each more powerful than the last; and that we are now ready to make a step change into a Fourth Generation approach to helping young people become better learners. Each of these generations is still with us: they overlap and linger, rather than replacing each other in a series of neat revolutions. But there are strong signs that the Third Generation is rapidly metamorphosing into the Fourth; and that, while a good deal of practical wisdom has already accrued, the latest perspectives are opening up a panorama of new possibilities — and new questions. The Fourth Generation is just beginning; but it seems to hold out an important promise: that education might be able to deliver more effectively what young people say they want:

greater confidence and capability in the face of real-world uncertainty.³ I shall pass quickly over what I am calling Generations One and Two, and will focus on the Third Generation, and the ways in which it too is being rapidly superseded.

“... education might be able to deliver more effectively what young people say they want: greater confidence and capability in the face of real-world uncertainty.”

About the Author

Guy Claxton is Professor of the Learning Sciences at the University of Bristol's Graduate School of Education. He is the author and editor of more than twenty books, including the best-selling *Hare Brain, Tortoise Mind, The Wayward Mind* and *Building Learning Power*. His practical ideas about how to expand young people's appetite and capacity for learning have influenced educational theory and practice in many countries, including New Zealand, Australia and Brazil, as well as in the UK. He holds degrees from Cambridge and Oxford, and is a Fellow of the British Psychological Society.

2 The First Two Generations

The first generation was a recognition of 'learning' in name only. When people said they were interesting in 'improving the quality of students' learning', it rapidly turned out – by page 3 of the prospectus, say – that all they meant was 'raising attainment'. 'Learning' was used solely to refer to the *outcome* of schooling: the Key Stage 2 SATs results, or the A*-C's at GCSE, for example. There was no recognition of 'learning' as an interesting and complicated *process* going on in children's conversations and between their ears. In the first generation, the idea of 'good teaching', therefore, did not need to alter. Good teaching was clear, well-paced, interesting, systematic. It remained defined in terms of the teacher's ability to put across information, and develop the skills of literacy, numeracy and so on, in a pleasant and effective manner.

The second generation of approaches to 'learning to learn' aimed to develop 'study skills'. It was based on a dawning recognition that there were practical things that students could do to improve the organisation of their knowledge, the reliability of their memories, or the effectiveness of their revision. The concern with 'improving learning' usually surfaced before exams, and manifested itself as hints and tips on how best to retain and recall what had been learned. Students were given ideas about how to plan their revision schedule; how to use mnemonics to remember their French irregular verbs or the colours of the rainbow; how to represent the structural relationship of key points using 'spider diagrams', or what came to be branded and commercialised as 'mind maps'. Learning to learn involved practising a few simple techniques that would enhance comprehension, organisation and retention, and thus improve performance in traditional examinations. 'Good teaching' was much as before, but supplemented by the one-off transmission of a few such techniques.

Learning to learn – the four generations

First Generation	Raising attainment Outcome of schooling (e.g. KS2 SATs results) 'Good teaching' was about content and acquisition 'Good teachers' could put across information, develop literacy and numeracy, etc.
Second Generation	Develop study skills Hints and tips on retaining and recalling for tests Practising techniques 'Good teaching' as before, plus delivering these techniques
Third Generation	Expanded to include emotional factors (e.g. self-esteem) Characteristic ways of learning (e.g. multiple intelligences) 'Good teaching' included reducing stress levels and helping students raise their attainment levels Concerned with the 'how' of teaching
Fourth Generation	Involvement of students in the processes Concerned with how students can be helped to help themselves (e.g. think creatively) Teachers themselves involved in becoming better learners Developmental and cumulative – encouraging the 'ready and willing', not just the 'able'

3 The Third Generation

G3 approaches to learning to learn

Emotional factors

The third generation approaches to learning questioned two main aspects of the second: its overwhelmingly cognitive focus (largely on memory); and the reduction of learning-to-learn – L2L hereafter – to simple 'hints and tips' that could be 'bolted on' to classroom practice without changing the teachers' normal *modus operandi*. In the third generation ('G3') approaches, the understanding of learning was expanded to include emotional factors such as 'self-esteem'. It became widely believed that children couldn't learn (as well, or at all) if they were stressed, and so 'good teaching' came to include the modulation of the emotional climate in the classroom. Self-esteem, it was thought, could be undermined by the experience of failure, so a 'good' teacher might try to do her best to protect her students from this distress by concealing her (inevitable) judgements of (relative or absolute) failure as much as possible, and by creating gentle gradients of difficulty in the tasks she set, so that children could proceed smoothly upwards without ever getting frustrated or confused – and therefore upset. Various ways of reducing stress levels included playing background music of approved kinds. Mozart would generally be held to be preferable to Gnarlis Barkley, for example.



Learning styles

It was also a core article of faith, in G3 approaches, that students possessed enduring 'learning styles' – characteristic ways in which they approached learning as a whole – which were few in number (three, say, or sometimes as many as eight), and relatively easy to diagnose. A popular version of this was the 'VAK' model, according to which all youngsters could be characterised as predominantly Visual, Auditory or Kinaesthetic learners. One local authority booklet on learning to learn for its teachers authoritatively told them that '29% of us prefer to learn by storing [visual] images in our brains', while '34% of us prefer to learn by storing sounds in our brains', and '37% of us prefer to learn by movement or touch'.⁴

A second, rather more sophisticated version of learning styles was based on Professor Howard Gardner's notion of 'multiple intelligences', first published in 1983.⁵ Put simply, people possessed not just one fixed, general-purpose pot of 'ability', but eight different ones dedicated to such areas of activity as language, mathematics, music, spatial awareness, physical skill and grace, social relationships, self-awareness, and interaction with the natural world. 'Each of us has all of them,' said Gardner, 'but in different measure and combined in different ways.'⁶ The inference that teachers frequently drew was that they should become more aware of the differing profiles of styles and abilities with which they were confronted (by administering approved questionnaires), and expand and diversify their repertoire of teaching methods accordingly. They should remember, for example, to enfranchise the 'kinaesthetic learners', or those richly endowed with 'bodily-kinaesthetic intelligence', by regularly having students move about and touch things. 'Good teaching' expanded again to include ways of engaging these different learning modes and intelligences.

The 'science' of G3

G3 approaches were generally keen to establish their scientific credentials. Teachers were continually provided with seemingly incontestable facts to support the advice they were being given through publications, consultancy and training. '37% of us prefer to learn by movement and touch' sounds pretty confident. 'Research shows that pupils with high self esteem are more successful learners', says the same booklet. Most persuasive of all was the repeated claim that

these G3 approaches were underpinned by the latest, cutting-edge research on the brain itself. The booklet from which I have been quoting is subtitled *Get to Know Your Brain and How to Learn*. In the Foreword, the Chief Executive of the LEA tells us that: 'with the advent of highly sophisticated neurological techniques a vast amount of evidence now exists which assists our understanding of how the brain works and how learning really takes place.'

For example, G3 advocates would confidently explain the adverse effect of stress on learning in terms of the workings of the 'reptilian brain', which, under stress, 'blocks the Neo-Cortex and the Limbic System from thinking and remembering, so that learning is slowed down or prevented.' Sipping water while you are studying is justified not solely on the sensible grounds that being thirsty is a distraction, and that being allowed to take a drink when you want to is being treated in a small way like a grown-up, which most children appreciate. No, it is because 'our brains, like the rest of our bodies, become dehydrated if we do not drink enough water. Dehydrated brains cannot learn!' Listening to soothing music, too, has a neuroscientific justification. 'Relaxed brains learn more effectively.' 'Music can help your brain prepare for learning.' And: 'Research shows that playing music by Mozart stimulates the brain.'



There was almost a feeling, in the G3 approaches, that water bottles and background music were so radical, contentious even, that they needed all the support they could get from high-status science – *real* science, not just psychology – to convince teachers and their (assumed-to-be hard-nosed) managers that they were sensible and valid things to do. Many of these G3 approaches were, as I say, greeted with a good deal of enthusiasm. And they did indeed redirect teachers' attention from the traditional preoccupation with content and acquisition – from the 'What?' and 'How much?' of the curriculum – to a genuine interest in the 'How?', and how to support the 'How'.

Beyond G3?

Despite a wealth of enthusiastic anecdotes and endorsements, however, there were few attempts to evaluate the effectiveness of these interventions in any systematic way. But they did begin to get many teachers – and in some cases their students, too – interested in what learning minds were, and how they worked. 'Good teaching' moved beyond the traditional concern with Control and Transmission – with optimising what was going on at the teacher's end of the process – to a recognition that you could not really do that successfully without also thinking about what was going on at the other end, in the hearts and minds of the students. And this required thinking of students not just in terms of the traditional coarse concepts of 'ability' and 'effort' (moderated, in some cases, by 'home background' and/or 'learning difficulties'), but in terms that did greater justice to the real intricacies of learning and thinking. The G3 approaches had their flaws, but they were very effective in preparing the ground for a new wave of approaches, now emerging, that are making yet another step change in our understanding of L2L.

Over the last few years, it has become apparent that this further development is both necessary, and possible. It is necessary because some cracks have begun to appear in the shiny rhetoric of the G3 approaches. And it has become possible to move on because a deeper and more robust understanding of L2L has been generated by those who had a better grasp of what was actually going on in neuroscience, cognitive science, and other disciplines such as cultural psychology that were contributing fresh ideas to educators about the nature of learning. Perhaps I can summarise these trends by exploring a few ways in which we might judge L2L approaches, and in the light of which we can see the progress that G3 approaches have made over the earlier ones, and also discern where they, in their turn, can be improved upon.

“The G3 approaches had their flaws, but they were very effective in preparing the ground for a new wave of approaches, now emerging”

The whole elephant

G3 approaches to L2L tended to be rather bitty. There were plenty of practical ideas around, but they lacked a framework that would make those ideas add up to more than the sum of their parts. Mind maps were supposed to help you organise and retrieve your knowledge; your bottle of water lubricated your brain cells; your learning style told you what your overall learning strengths were, and encouraged you to play to them ... but where was the Big Picture?

If you go down to the local gym, your fitness instructor will have a useful 'map' in her head of what the different elements of 'fitness' are, and how they fit together. The flexibility of your joints, the strength of your limbs, your speed and stamina, the speed of recovery of your respiratory and cardiovascular systems, and your body-mass index: all contribute to fitness. Different exercises, and different bits of kit, help you work on the different elements; and you have an idea of how the stretches and the weights and the running all fit together. Because she has an overview of 'fitness', she can design a balanced and coherent programme for you. But the G3 approaches to L2L were not at that stage. They laid the ground, but they did not have a Big Picture of what the all-round effective learner looked like. So one clear goal for the Fourth Generation approaches is to develop at least a sketch of what overall 'learning fitness' comprises.

Without that overview, some G3 enthusiasts were inclined to mistake the part for the whole – as in the old story of the group of blind people encountering an elephant for the first time. One happened to get hold of the trunk, and declared that elephants were like pythons. Another felt an ear, and claimed that they were not like snakes at all, but like palm leaves. A third grabbed a leg, and asserted that both her colleagues were mistaken: elephants were much more like tree trunks. And so on. (There is a nice version of this story in which a teacher described the situation without telling the children that the people were blind, and asked them at the end what kind of people they thought they were. One child ventured: 'Please, Miss ... experts?') So some teachers and pundits discovered mind maps, and tried to make them the be-all and end-all of L2L. Others got hold of 'self-esteem', or 'learning styles', or 'critical thinking', or 'metacognition',



and encouraged their students to develop a lop-sided view of themselves as learners. Fourth Generation approaches would need to make sure that they really were developing 'The Compleat Learner', and not leaving their students with the mental equivalent of over-developed biceps but no stamina.

It is becoming apparent that some of the proponents of G3 learning-to-learn were rather credulous when it came to the scientific underpinnings of their advice. It simply isn't true that the brain can be cloven horizontally into three layers, the lowest of which has the mind and the morals of a snake; nor vertically into two halves, the hemispheres, that do different but complementary mental jobs. Ask someone to read a sentence, or do a simple sum, and within a hundredth of a second both sides of their brain are lighting up all over the place. If they have to say True or False to '2 + 2 = 5' different bits of both right and left hemispheres light up than if you give them 'Two plus two equals five'. Howard Gardner, much respected and much quoted by G3 enthusiasts, has written:

I do not impugn their motives – though I do question the judgment of the brain's great dichotomisers. Many, for example, sincerely detect faults in our society, especially in its educational system, and are eager to use any method at their disposal to bring about desired changes. But the scientific enterprise is too precious to be sacrificed to any cause, however worthy it may appear. It is time for investigators conversant with brain lateralization to announce that the unknowns in the field dwarf the little that is known, and the little more that is suspected.⁷

Amen to that.

Guy Claxton is Professor of the Learning Sciences at the University of Bristol's Graduate School of Education. He is the author and editor of more than twenty books, including the best-selling *Hare Brain, Tortoise Mind*, *The Wayward Mind* and *Building Learning Power*. His practical ideas about how to expand young people's appetite and capacity for learning have influenced educational theory and practice in many countries, including New Zealand, Australia and Brazil, as well as in the UK. He holds degrees from Cambridge and Oxford, and is a Fellow of the British Psychological Society.



www.buildinglearningpower.co.uk



How do children learn? Can they be helped to do it better? If so, what is involved? And is 'learning to learn' — L2L — an accessory to the core business of schools, a distraction from it, or a new way of thinking about what that core business really is?

In this timely essay Guy Claxton, himself an eminent pioneer in the field of L2L, looks back over the evolution of the idea and assesses the state of the art. He points out some of the false starts and blind alleys that have been made as the field has evolved over the last twenty years. But he argues that these pioneering ups and downs are inevitable, and that we have actually made great strides in identifying the powerful learner's habits of mind, and how to strengthen them.

In his characteristically authoritative and entertaining style, Guy Claxton guides us through this brief history, and lays out the exciting future that is in store. Where the early pioneers saw L2L in terms of revision advice and mnemonics, and their successors talked in terms of 'learning styles' and 'brain-friendly learning', the science of learning now offers a very much deeper and more challenging vision of what is possible.

The capacity to learn is much more elastic than we thought even a decade ago, and there is now a good deal of ingenious case-law about how to stretch it. Indeed, Claxton argues that this body of work provides a powerful way of making coherent sense of the current fascination with 'personalising learning'. L2L is not just a way of customising school's traditional offerings; it can set young people up — able and average alike — to meet life's challenges with greater confidence and capacity.



"Thanks for this. It's excellent. I read bits out to colleagues over dinner and we all cheered!"

Prof Philip Adey, King's College London

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