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Education for the Learning Age: A Sociocultural Approach to Learning to Learn

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People learn in the process of trying to achieve valued goals. We find ourselves in situations in which we wish to attain something, but are not yet sure how to go about it. So we explore and experiment, and if our learning is successful, we gain the knowledge we desire, and develop some skills and 'qualities' along the way. As our tennis serve improves, so we win more points. As we struggle to make sense of difficult material, and to express our understandings better in essays or seminars, so our grades improve. And, as these learnings often take place in the company of others, our social skills, and our intuitive grasp of how other people work and think, develop as well.

But as we learn, we are also changing as learners. 'Learning to learn' is the ever-present shadow of our attempts to gain more obvious kinds of mastery. As we study, so we learn more about what it takes to study and what it means to be a student. If we are successful in pursuing our interests, we have learnt not only how to secure a particular goal, but how to engage more effectively with a kind of uncertainty. Achieving the goal is the 'figure' of any learning activity, if you like, but its 'ground' is the development of our intuitive understanding of, and expertise at, the learning process itself. As we learn what to do, so we change *how* we know, and how we *come* to know. Education is unavoidably concerned with all of these layers and levels of learning.

Most of our learning – whether it be learning to walk as a baby or after a stroke, perfecting a new lab technique, or working through a difficult patch in a relationship – is done with others, and in the context of social partners and material resources that amplify and modify our own accumulated capabilities and dispositions as learners. Even the solitary mathematician, or the school student struggling with her homework, is learning in the context of, and with the aid of, a host of culturally constituted tools – books, symbols,

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computer graphics – which afford or invite certain approaches to the learning task, and preclude others. The settings in which people find themselves – especially those which they inhabit recurrently – thus channel the growth of their minds.

These recurring contexts constitute the dominant 'cultures' of a person's world. We all belong to a whole variety of 'clubs', each of which binds its 'members' into a shared set of habits, attitudes and judgements about what matters. A family, a school, a group of friends, a profession, a workplace and a nation are all examples of 'cultures', used in this broad sense. As will be obvious from these examples, culture clubs are often 'nested' inside each other, and they can also vary dramatically in the beliefs and values that underpin the ways of speaking, acting and interrelating which they deem 'normal' or 'proper'.

More specifically, in the present context, cultures value different learning achievements, and foreground, or neglect, different layers of learning. For example, one culture may reward intellectual prowess and ignore the development of empathy; another, the reverse. Social groups may privilege different learning methods. One may teach mainly through didactic transmission; another through informal modelling and *in situ* coaching. They may differ in their tacit epistemological beliefs, one assuming that extended periods of rote learning must precede any attempt at creativity, while another views such learning by rote as inherently disrespectful of, and potentially damaging to, the free spirit of the (young) learner. And – perhaps most importantly in the present context – cultures may differ markedly in the extent to which they recognize, value and foster the development of 'learning to learn' as a legitimate, practicable and useful educational objective. The central contention of this chapter is that Western education has, by and large, not seen education in this latter light, as an apprenticeship in the craft of real-life learning, and that it both could, and should.

The Purpose of Education: To Thrive on Uncertainty

Let me start with the 'should'. Education is essentially a moral enterprise. It maps out courses of learning that are designed to give people knowledge, skills, attitudes and qualities that are deemed to be worth having. Educators are in the business of making value judgements about what kinds of minds people need, and are therefore to be cultivated. In adult and professional education these may be quite specific. The doctor needs to have mastered areas of anatomy and pharmacology in order to be able to treat and prescribe. The attorney must know the law and have become skilled in the subtle arts of rhetoric and billing. But the education of the young, being the generic foundation on which all such specialized learning will be built, has to have goals that are both broader and deeper. At root, school exists to equip young

people with the knowledge, capabilities and dispositions which they will need to cope well in the world that they are going, as adults, to inhabit (and especially with those facets of mind which cannot be presumed to just develop 'naturally' in the process of growing up). What 'cope well' means, and therefore which facets of mind are valued, varies enormously within and between cultures. Some prize compliance, others creativity; some seek to build a communitarian spirit, others autonomy and individualism. The life-preparation that young people receive depends on their elders' image of 'the good life' and 'the harmonious society'.

But it also depends on whether the elders see their world as stable or changing, and on their image of the future. The goals of education are relative to the future which the 'elders' of a society foresee (Cole, 1996). If that future is imagined accurately, and the curriculum is appropriate, the ensuing education will be empowering. If the methods are ineffective, or if they develop skills that are unequal or inappropriate to the demands of the real world-to-be, then education fails. In a stable society, yesterday's education, if it was well designed originally, will do for the citizens of tomorrow. But if a culture is undergoing radical change, the demands of the future cannot be clearly predicted, and a different kind of preparation is required. If the main thing we know about the future is that we do not know much about it, then the key responsibility of the educator is not to give young people tools that may be out of date before they have even been fully mastered, but to help them become confident and competent designers and makers of their own tools as they go along.

The development of 'learning to learn', the parallel curriculum which, in stable, traditional societies, may not be as visible or highly valued as the handing on of specific, valued knowledge, thus becomes of pre-eminent importance. It can no longer be ignored or left to chance. Though I have already argued that learning to learn necessarily shadows the development of specific domains of understanding and expertise, the kind and the extent of learning to learn depends heavily on how it is viewed and handled. For a culture that is moving rapidly into a period of instability and uncertainty, and of increasing individual opportunity and responsibility for dealing with those demands, an imaginative reappraisal of methods and priorities becomes essential. If this challenge is ducked, the young will flounder (Claxton, 1999).

It seems undeniable that many societies – and not only the 'Western' and 'Northern' – are now in this position. Heads of state regularly pontificate about the need for national work forces that are not only skilful but flexible. Transnational corporations routinely shift vast amounts of capital around the planet in pursuit of the most favourable skills-to-costs ratios, creating widespread vocational insecurity. 'Jobs for life' and the routinization of career that went with them are fast becoming a nostalgic dream (Hutton, 1995; Reich, 1991). Instead, the onus is on individuals, companies and governments to manifest a continual willingness to expand people's 'employability'; to

invest in the development of their 'cognitive capital'. In Aaron Beck's 'risk society' (Beck, 1992) everyone needs to be good at learning, and willing to take over for themselves the responsibility for crafting their own working lives.

And it is not just in the workplace that such capabilities and attitudes are needed. Cheap international transportation, multi-ethnic societies, global media and information technology now flood individual lives with a plethora of lifestyle images and options that would have been literally unthinkable a generation ago. The challenge is not just learning to use new programs and machines, nor even developing skills of entrepreneurship; it is managing the explosion of possibilities, and the attendant weakening of a traditionally based sense of identity, that ensues (Gergen, 1991). Thus we can argue that education, if it is to offer an effective preparation for life, should foreground the development of transferable, real-life learning skills and dispositions. But can it do so?

The Sociocultural Approach to Learning: A Tale of Three Discourses

Cultural–historical activity theory (CHAT) provides an ideal perspective from which to see how this challenge is to be met, for, in essence, it asserts the crucial importance of looking at learning in its social, cultural and historical context. There are, if you like, three 'discourses' within which learning and development can be framed. The first is the 'individual–developmental' discourse of psychology, within which the individual person is viewed as a constellation of knowledge structures, skills, habits, attributes, attitudes, beliefs, qualities and dispositions. These are the accumulating residues of experience and inheritance: our tendencies for action, anticipation and interpretation and our orientations towards public issues and private concerns. The talk in this discourse is of hypothetical entities such as 'intelligence', 'short-term memory stores', 'learning strategies', 'personality traits' and such like. Rashid is 'bright' but 'timid'. Heather is 'friendly' but has a 'short attention span'. Psychological terms point to our mental 'default modes' – anyone of which may, in an instant, be overturned or rewritten by circumstances.

In the present context, two such psychologized constructs of particular relevance are what we might call *epistemic mentality* and *epistemic identity*. By 'epistemic' I mean those aspects of a person's make-up that relate to the ways in which they learn and know. Thus 'epistemic mentality' refers to someone's accumulated ways of knowing, learning strategies and styles, and their habits of mind. While 'epistemic identity' refers to the person's view of themselves as a learner and knower: what they are good and bad at learning; what is worth knowing; what say they have in the generation and evaluation of knowledge and expertise; and so on.

The second discourse is the 'social–historical' one (using this phrase, for the moment, in a non-technical sense) of sociology, anthropology, political theory and the other macro-social sciences, which speaks of the changing nature of social structures and institutions, of deliberate policies and implicit cultural practices. The language here too is of abstractions and generalizations cast over time and space: 'power', 'ritual', 'dissident sub-cultures', 'risk society', 'social exclusion' and so on. From this perspective, the individual finds her or himself 'positioned' within structures, practices and 'discourses' that have a cultural, rather than a psychological, reality. Of central interest in what follows will be those aspects of the cultural world that impact most powerfully or directly on the development of epistemic mentality and identity: what I shall refer to as the *epistemic milieu*.

The third discourse, which we might call that of the 'irreducible situated moment', or 'mediated action' (e.g. Wertsch, 1995), asserts that the categories of the first two discourses, being abstractions and tendencies, are in principle never able fully to catch the intricate complexity of the unique moment in which a person interacts with an unprecedented material, social and cultural setting. What the individual does, and how they learn, cannot be predicted on the basis of their psychological attributes, because these are selected, customized and instantiated, in unpredictable ways, on the basis of each shifting context. In the moment, a cloud of possibilities precipitates as a unique way of being, seeded by the perceived demands, opportunities and resources which the setting affords. Likewise, the setting itself manifests as a complex, concrete reality that is dependent on the natures and the perceptions of participating groups and individuals. A student may extend her capability by making intelligent, simultaneous use of the internet and her father: in the moment, she becomes, to use David Perkins's (1993) phrase, 'person-plus'. Her zone of proximal development is expanded; her cognition distributed (Salomon, 1993; Clark, 1997). As Wertsch (1995) says, in any particular instant, the 'person acting with mediational means' is the irreducible unit of analysis, and of intelligence.

As a result of a succession of such momentary encounters, both person and culture are changed. Their structures, processes and *modus operandi* are altered – maybe imperceptibly, maybe quite evidently and significantly. As a father models for his daughter, in conversation, a strategy for thinking about where one might have lost something, she is appropriating and internalizing that strategy for herself (Tharp and Gallimore, 1988). The 'intermental' becomes 'intramental'. While, as a result of an off-the-cuff remark, the family may realize that their familiar old Waring blender affords a startling new possibility – a recognition that changes both the social and the material culture of the home. (I will leave the reader's imagination to fill in what such a possibility might be.)

If we are to take a longer-term view of either personal or cultural development – as education unavoidably must – we have to move back from the

intricate particularity of the third discourse into the cumulative abstractions of the other two. Those who are concerned with the dynamics of institutional change (e.g. Fullan, 1991; D. Hargreaves, 1995) return to the second. Those who (like myself in the present context) are concerned with the developing empowerment of the individual, return to the first – but always with the awareness that we are dealing with more-or-less useful fictions and idealizations.

There are those who have used the insights of the third discourse to argue that the other two are in some sense illegitimate, but in doing so they have failed to appreciate the utility of complementary perspectives and languages, none of which is ultimately veridical, but each of which is suited to the pursuit of a particular concern. Thus, to acknowledge that all learning is 'situated' does not mean that we can say nothing about qualities of the person that become increasingly disembedded characteristics of the way they meet uncertainty, for example. To understand the way in which people are enculturated into a view of learning, and of themselves as learners, we need to focus on the situated moment (see, for example, the chapters by Carr, Mercer, and Pontecorvo and Sterponi, in this volume). To describe the progress that is made, as a result of such interactions, towards a set of valued educational goals, we need the language of psychology. Cultural–historical activity theory starts from and works with the insight that these three discourses are simultaneously legitimate and essentially and valuably complementary. It is with the interplay between these different perspectives, in the light of the social context outlined in the first section, that the rest of this chapter is concerned.

The Layers of Culture

One can explore the relationship between culture and learning at any level one chooses, from the global, to the directly interpersonal, to the solo individual trying to make sense of some cultural practice or material artifact. The momentary interaction between a teacher and a student, for instance, is imbued with influences from the classroom culture, from the culture of the subject discipline, from the school, from the community, from the nation and ultimately from the changing nature of international politics and economics – as well as from the home cultures and histories of the individuals concerned. (Lemke, in this volume, explores some of the interactions between these layers, and points out their different time-scales.)

It is unfortunate, therefore, that contemporary sociocultural theorists (in North America and elsewhere) have tended to neglect the wider political and ideological settings in favour of a detailed concentration on the micro-dynamics of the individual family or classroom, especially the adult–child dyad, and the local characteristics of 'zones of proximal development'. But the values and assumptions of the wider culture necessarily impact on the classroom in

multiple ways: through its espoused goals, forms of assessment, social organization, roles and rituals, the language of the teacher's commentary, the materials supplied and the opportunities for learning they afford, and so forth. Whether deliberately or by default, what goes on in the ZPD is channelling students' long-term development of mind in one direction rather than another: a direction that is strongly influenced by the wider cultural values with which the ZPD is imbued (Wells, 1999). If education is to equip young people to live the uncertain life, a concern with the changing nature of society and its corollary demands – with the eventual real-life capabilities and dispositions which will be needed – has to reach down into the micro-structure of the teacher's momentary intentions and interactions.

It is time, in other words, for sociocultural theory to emerge from its historical arguments, its internecine disputes and its sometimes arcane language, and address contemporary issues of major social significance. Wertsch (1995), commenting on this imperative, says: 'The forces of globalization have accelerated in a variety of arenas such as finance, economic production and communication, while simultaneously new forces . . . of nationalism have emerged . . . [with] often brutal consequences'. In this context, he goes on:

> It is disheartening that the human sciences have seemed to contribute so little to understanding, let alone addressing, the issues at hand. . . . This is not solely, or even primarily, the result of some unwillingness or perversity on the part of researchers. . . . We see it as largely resulting from the use of inadequate or inappropriate languages for talking about these problems . . . [that make it] nearly impossible to formulate intelligent integrative pictures of complex phenomena. [Thus] a starting point for making the human sciences more capable of addressing today's major social issues . . . is to find a common language that makes it possible to communicate effectively across artificially drawn academic boundaries. (Ibid., p. 56)

And the problem may also have lain, as I have said, in social scientists' reluctance to look at the social practices and institutions which fascinate them – such as schools – not just as they currently exist, or in terms of minor modifications to classroom practice or school organization, but from the perspective of radical social action, based on an awareness of the past and an imaginative and ethical view of the future of education.

My starting point, then, is the reconceptualization of education as the creation of cultures and contexts within which young people develop the epistemic mentalities and identities characteristic of effective lifelong learners. Schools should become 'communities of practice' where the predominant practice is 'learning' (or 'inquiry', as Wells, this volume, proposes) and where, concomitantly, the 'elders' of the community are themselves exemplary learners, and skilled coaches of the arts and crafts of learning. I shall illustrate my approach with three case studies, showing how certain learning dispositions,

appropriate to the 'learning age', can be fostered in the school environment: how, in other words, education can be reframed as an apprenticeship in developing learners' ability to extend their 'zones of proximal development' for themselves. The first two examples relate directly to the development of students as learners. The third looks at cultural factors that affect teachers' openness and responsiveness in the face of imposed educational change. The overall concern, in each case, is to demonstrate how key aspects of learners' epistemic mentalities and identities are shaped by the epistemic milieux in which they find themselves.

Resilience

One of the key qualities of the effective real-life learner is surely the ability to stay intelligently engaged with a complex and unpredictable situation, a property we might call 'resilience'. Resilient individuals will be more inclined to take on learning challenges of which the outcome is uncertain, to persist with learning despite temporary confusion or frustration, and to recover from setbacks and failures, rededicating themselves to the task they have undertaken. The polar opposite of resilience we might call 'fragility' – the tendency to get upset and withdraw at the first sign of difficulty, and to shift from 'learning mode' into a defensive, self-protective stance.

One of the most important influences on the development of resilience is the kind of language which children's parents, teachers and elders use to comment – for the most part informally – on children's learning activities. Particularly critical are the cultural messages that are conveyed through this commentary at crucial moments of difficulty, failure or success. As a child teeters on the brink of frustration or confusion, what kinds of emotional or strategic reactions, and what kinds of attributions and interpretations, are being fed to them through these processes of casual enculturation? Indeed, what kinds of occurrence are deemed worthy of note by their caregivers? Is continuing engagement, despite the lack of immediate success, a cause for an approving smile or a word of encouragement? Or is only success recognized and rewarded? If failure is noted at all, is the child coached to see this as a cause for concern, in need of a kind of emotional cosseting; or as a reflection of lack of ability; or as due to insufficient effort? 'There, there, never mind; let's have a cuddle' may teach the child that frustration will, unless actively soothed and managed, naturally lead on to upset – and such reactions may therefore, paradoxically, make the child more fragile rather than less in the face of future difficulties – especially where external comforting is not available. 'Oh, you stupid girl', or 'You are a clumsy child' encourages the child to take on for herself an internal, constitutional attribution: the idea that she simply doesn't have what it takes. 'Come on, you can do it', or 'Let's think of another way of tackling this' models for the child the idea that success may

come as a result of greater persistence or ingenuity, and thus coaches her to appropriate and internalize these interpretations for herself.

Carol Dweck (e.g. 1986, 1999) has investigated some of the core conditions that either support or inhibit the development of resilience. It turns out that the educational culture's 'discourse of ability' is an important influence. She identifies two opposing views of general ability (or 'intelligence') which may infuse the languages of families or teachers. One, the 'entity view', sees ability as a more-or-less fixed, God- or gene-given endowment of general-purpose mental capacity, which effectively sets a ceiling on aspiration and potential performance. The other, the 'incremental view', sees ability more as an acquirable toolkit of learning resources. Dweck has shown that cultures which embody the entity view tend to undermine learners' resilience, making them feel anxious and inadequate in the face of difficulty, leading to avoidance of difficult learning challenges and defensiveness in the face of frustration. Cultures that talk of learning as itself learnable, and which value engagement and tenacity as much as achievement and success, on the other hand, encourage the development of an epistemic mentality that is more robust and an epistemic identity that is more secure. Thus the informal language that teachers and parents use to comment on success, failure and difficulty embodies and conveys a view of learning and knowing which takes up residence in youngsters' minds, channelling the development of their learning dispositions, and influencing how their learning capabilities are expressed and developed (see also Gipps, this volume).

Resourcefulness

My second example is inspired by the growing literature on 'distributed cognition' (e.g. Clark, 1997; Salomon, 1993). Not only, as Vygotsky (e.g. 1978) has long taught us, do individuals internalize the cognitive and linguistic tools they are offered by their epistemic milieux; they also make continual intelligent use of the resources that are afforded by their current environment. They capitalize on found assets, and 'off-load' cognitive effort (both individually and collectively) by exploiting facilities and creating artifacts (such as notebooks, computers and filing cabinets) that shoulder some of the computational or mnemonic load.

Environments 'afford' resources, but these resources do not become functional aids to intelligent learning unless they are perceived as such by the learner. It may well be, as Gibson (1979) argued, that evolution has built into the human perceptual apparatus some of these sensitivities. Even small babies seem to know that a looming shape is probably an approaching object, and therefore affords 'greeting' (if it is a face) or 'ducking' (if it is a ball). But many of our useful 'affordances' have to be discovered. The baby knows that a nipple affords sucking, but not that a restaurant affords eating, too. The

affordances that become salient and effective for any individual thus depend critically on the nature of the physical artifacts and social practices which surround them, and on how their attention is directed towards certain uses and interpretations by their human tutors and models. For 'Crocodile Dundee', any encounter with another person affords 'conversation'; for the average New Yorker, it most definitely does not. And functional affordances also depend on other factors such as sub-cultural membership and pre-existing dispositions. For most Londoners, subway trains afford 'travelling' and 'reading'; for others, in addition, they afford 'painting', 'mugging' or 'clowning'.

Thus another of the effective lifelong learner's dispositions is what we might call resourcefulness: the tendency to look out for any utilities and resources that might support current learning. Conventional educational milieux tend to take an individualized, internalized view of human intelligence, rather than this extended, ecological view, and thus fail to provide opportunities to develop (except in particular cases, such as the current infatuation with computers and ICT) the disposition to make intelligent use of the social, technological and material environment. When the 'correct' tools for a particular learning job are neatly laid out – in readiness for a chemistry practical class, or a history investigation, say – an opportunity to develop resourcefulness is missed. Teachers who are involved with the PEEL initiative – the Project for the Enhancement of Effective Learning – in schools in the Australian state of Victoria (Baird and Northfield, 1992), for example, have developed a variety of ways of creating learning situations that are manageably 'messy', with respect to problem-definition as well as the resources needed, thus giving students valuable experience in deciding what resources they are going to make use of, and how.

Educational institutions also differ in the extent to which they provide opportunities for a wide range of epistemic tools to be expressed, exercised and developed. They privilege certain ways of learning and knowing, and marginalize or stigmatize others. For example, the role of intuition in learning tends to be undervalued, and therefore under-exercised, in schools. Certain kinds of complex predicament are best tackled through a rhythmic combination of articulate, purposeful 'hard' thinking, and relaxed, playful reverie – learning through intuition (Claxton, 1997). Yet the predominant culture of Western societies – in their business and judicial systems, for example, as well as in their schools and colleges – is one which disdains intuition, and assumes that hard thinking and articulate clarity are universally to be preferred.

As Fensham and Marton (1992) point out, 'the education of intuition' was one of the four major themes for educational innovation that emerged from the famous 1957 Woods Hole conference (Bruner, 1960); and it was the only one of the four that subsequently sank without trace. If the effective lifelong learner is someone who understands the value of a broad range of ways of knowing, and who is alert to the possibilities and the utilities of each in particular learning situations, then their epistemic cultures have to give them

opportunities to practise them. (See Wells, this volume, for a more extended justification and elaboration of a similar view.)

Time and Open-Mindedness

My third and final example of the ways in which epistemic mentality/identity and epistemic milieu interact applies not directly to the world of young learners, but to the ways in which teachers, as learners, relate to educational change. Andy Hargreaves (1994) draws on anthropologist Edward Hall's (1984) distinction between two different cultural approaches to time, the monochronic and the polychronic. In a monochronic culture, tasks are clearly defined and tackled sequentially according to a predetermined timetable. There is a clear sense of the kinds of interactions between people that are 'on task' and those that are not. 'Success' is defined in terms of the production of 'solutions' that (appear to) meet the specification on time. In polychronic cultures, tasks are routinely tackled in a complex, parallel fashion without hard-and-fast deadlines. Social and instrumental interactions are interwoven and informal, often emerging organically and opportunistically. 'Success' is defined in terms of the production of 'solutions' that fulfil the initial intentions, even if not the technical specification, and which also serve to enhance social harmony and cohesion. Hall argues that stereotypically Northern European, North American and 'male' societies are monochronic, while Mediterranean, many 'Southern hemisphere', and 'female' societies tend to be more polychronic.

In terms of educational change, Hargreaves argues that the professional culture of elementary/primary schoolteachers tends to be polychronic, while the professional culture of educational administrators and reformers tends to be monochronic. The latter's natural inclination is to specify changes, and plan their implementation, clearly. Teachers may be given detailed documentation and designated times in which to assemble as teams to discuss the implementation of change, for example. Such an approach frequently leaves classroom teachers, however, feeling pressurized and over-managed, and generates a variety of forms of covert or overt resistance – even when the teachers are broadly amenable to the change itself. Simply through the failure to recognize cultural differences, innovation may come to be subverted or collapse under a rising tide of frustration ('Why are they so slow and fuzzy?' grumble the change promoters) and resentment ('Why are they so pushy and insensitive?' complain the teachers). If adult professional learning is to be supported effectively, managers and curriculum developers who spend their lives far from the chalk-face in a world of logistics, plans and abstractions, may need to become more sensitive to the very different cultures and mentalities that can obtain in staff rooms and classrooms.

A very similar sense of dissonance may accompany children as they move between home and school, or between primary and secondary schools. The

culture of the former, for many children, may be significantly more polychronic, while the latter, in each case, may be much more monochronic. For children who have grown up in strongly polychronic family cultures, for example, it is not easy to learn to turn engagement with learning on and off according to the dictates of a clock, rather than in response to the delicate ebb and flow of interest, and the shifting pattern of environmental and social affordances. From the sociocultural point of view, it is a major part of the teachers' role to be aware of such cultural transitions, and to build bridges between the different cultures which children from different backgrounds can walk over at a pace that does not exhaust them, or leave some of the stragglers totally behind (Kegan, 1994).

Conclusion

Even a cursory scan of the wider world beyond the familiar box of education suggests that there is a need to shift the focus of attention from the mastery of prescribed bodies of knowledge, skill and understanding towards the cultivation of the transferable capabilities and dispositions of effective, real-life lifelong learning (Claxton, 1999). And this is precisely where the sociocultural perspective becomes so important – for these attitudes and abilities cannot be 'taught' or 'trained' directly through programmes of instruction. Lilian Katz (1999), in a recent summary of research on early learning, concludes that 'Dispositions are not learnt through formal instruction or exhortation. Many [of the] dispositions that most adults want children to acquire are learned primarily from being around people who exhibit them; [and] are strengthened by being used effectively and by being appreciated rather than being rewarded'. Children acquire positive learning dispositions, in other words, by being 'apprenticed' to a community within which such dispositions are naturally manifested, modelled, recognized, acknowledged and valued by the 'elders' by whom they are surrounded. The tools and attitudes of learning have to be nurtured within an educational milieu that affords, supports and encourages their expression and their development. This involves not the design of new programmes of study, nor even, in the main, the adoption of new forms of pedagogy, but an attention to the implicit values and assumptions of the culture, and to making sure that its objects, its tasks, its non-verbal signals and so on are consonant with the dispositions that the culture wishes to develop. It is the beliefs and priorities that are dissolved in the micro-'how' of the school that matter; not glitzy new packages of 'what'. (Again, see Wells, this volume, for a similar conclusion.)

Some of the connections between the epistemic milieu and the mentalities and identities that it affords and encourages are not immediately obvious – at least from within the dominant educational culture. It is interesting to discover just how much the development of resilience is influenced by the apparently

innocuous discourse of 'ability', for example. It is interesting to see that classrooms that are neatly and tightly scripted may help students achieve, but may unwittingly do so by depriving them of opportunities to develop their own resourcefulness. It is interesting to observe how people's willingness to engage with change – teachers and children alike, maybe – depends on the way in which their culture structures and manages time. There are clearly many more such subtle contingencies between cultures, and the aspects of mind and self which they strengthen or suppress, that are waiting to be made explicit. It is only by adopting a framework within which a view of 'education as enculturation' is itself foregrounded, that such important information can be uncovered, and more empowering educational cultures be created.