Transformative Learning and Sustainability: sketching the conceptual ground

Stephen Sterling
University of Plymouth, UK

Abstract

The paper serves as an introductory mapping of the idea of transformative learning in relation to the challenges that contemporary socio-ecological conditions of unsustainability, complexity and uncertainty present to educational purposes and practice. The work of key theorists is reviewed briefly, and differences and commonalities in their interpretation of transformative learning is analysed briefly. In particular, Bateson's concept and model of learning levels is drawn upon to help explain different qualities and depths of learning experience, and to illustrate the theory of paradigm change at individual and organisational scales.

The paper then reviews the significance of transformative learning for higher education, and raises the question – drawing on examples – of how far mainstream higher education is able to provide transformative learning experiences, or whether it is inevitably associated with innovative learning environments outside the constraints of conventional education.

Introduction

Back in 1974, the economist E.F. Schumacher, whose work was seminal to the rise and development of ecological thought in the UK, wrote, 'The volume of education has increased and continues to increase, yet so do pollution, exhaustion of resources, and the dangers of ecological catastrophe. If still more education is to save us, it would have to be education of a different kind: an education that takes us into the depth of things' (Schumacher, written 1974, published 1997). This quote illustrates a fundamental conundrum: how far education, which for some decades has been identified as key to resolving environmental and sustainability issues particularly

at international level, is (as David Orr has pointed out) part of the problem. Orr (2004) dismisses the problems *in* education which occupy much educational discourse, and, echoing Schumacher, highlights the problem *of* education. He points out that there is no necessary correlation between high educational achievement and socially and environmentally benign sustainable behaviours, but rather the opposite. It is because of these paradoxes and arguments that educators interested in sustainability and social justice have, in recent years, looked to learning theory for possible ways forward. In particular, the concept of transformative or transformational learning has aroused increasing interest, as a way of conceiving and practising educational forms that might 'take us to the depth of things'.

There is an assumption in much learning discourse, in educational conferences, and in university teaching and learning strategies, that learning, *per se,* is self-evidently a 'good thing'. On this assumption, attention is often given to making learning effective, to learning to learn, learning methods and so on. Outside of education for change movements, which tend to be on the margins of the formal education system, much less attention is given to the question of the *purpose* of learning. Yet learning can be at the service of questionable values and ends. As the organisational learning theorists Argyris & Schön (1996) state:

> The value we attribute to an increase in effectiveness or efficiency depends on how we answer the question 'effectiveness or efficiency for what? …' The crucial point is that, as we try to understand or enhance organisational learning, we should keep in mind the variety of ways in which any particular example of it may prove to be invalid, unproductive or even downright evil. (Argyris & Schön, 1996, p.64)

Hence, I would argue, in tandem with Schumacher and Orr, that learning itself is a neutral process, which begs, in any particular case, valuative questions of context and intent. Biologically speaking, learning is to do with survival. The organism that is unable to adapt to external change perishes, and all organisms 'learn' to some degree and in some sense of the term. Now, on the global scale, social learning is a matter of survival too given the very real threats to our global environment (Wals, 2007). Yet, following Schumacher's argument, the quality of such learning needs to be 'of a different kind'. A great deal of learning, both everyday and through formal education, makes no positive difference to a sustainable future, and may indeed make that prospect less rather than more likely. More recently, a report on world futures has suggested that:

> The shape of the global future rests with the reflexivity of human consciousness – the capacity to think critically about why we think what we do – and then to think and act differently.
> (Raskin, 2008, p.469)

So whilst learning skills, or 'learning to learn', may be important in educational practice, this emphasis does not necessarily address the critical dimensions of context or reflexivity. Beyond 'learning to learn' is 'learning *about* learning', which raises questions about validity and ethical defensibility of our theory and practice. It is thinking about the sorts and qualities of learning we are involved in and for what purposes. According to Williams (2004), writing in a New Zealand report on learning and education for sustainability,

> This century may well be one of relearning on a grand scale…. This learning … needs to be a core part of learning across society, necessitating a metamorphosis of many of our current education and learning constructs.
> (Williams, 2004, p.4)

This report reflects a growing realisation that not only do current ways of thinking, perceiving and doing need to change in response to critical systemic conditions of uncertainty, complexity and unsustainability, but that old paradigms are the root of these conditions. Similarly, Lord Stern's Foreword in the HEFCE sustainable development action plan talks about the 'need for minds capable of creating new possibilities' and the need to 'transform our current ways of thinking and operating' (Stern, 2009, p.1).

Transformative learning theory

In the context of this kind of debate, where there is a call for re-examination of assumptions and values, critical thinking and new creativity, the concept of transformative learning is coming more to the fore. However, the term and evolving theory of transformative learning was not, initially, linked to the big challenges of social change and sustainability touched on above, but arose from the work of the adult educationalist Mezirow (1978). It refers essentially to a qualitative shift in perception and meaning making on the part of the learner in a particular learning experience such that the learner questions or reframes his/her assumptions or habits of thought. Hence, Mezirow (2000) suggests that transformative learning:

> refers to transforming a problematic frame of reference to make it more dependable ... by generating opinions and interactions that

> are more justified. We become critically reflective of those beliefs that become problematic.
> (Mezirow, 2000, p.20)

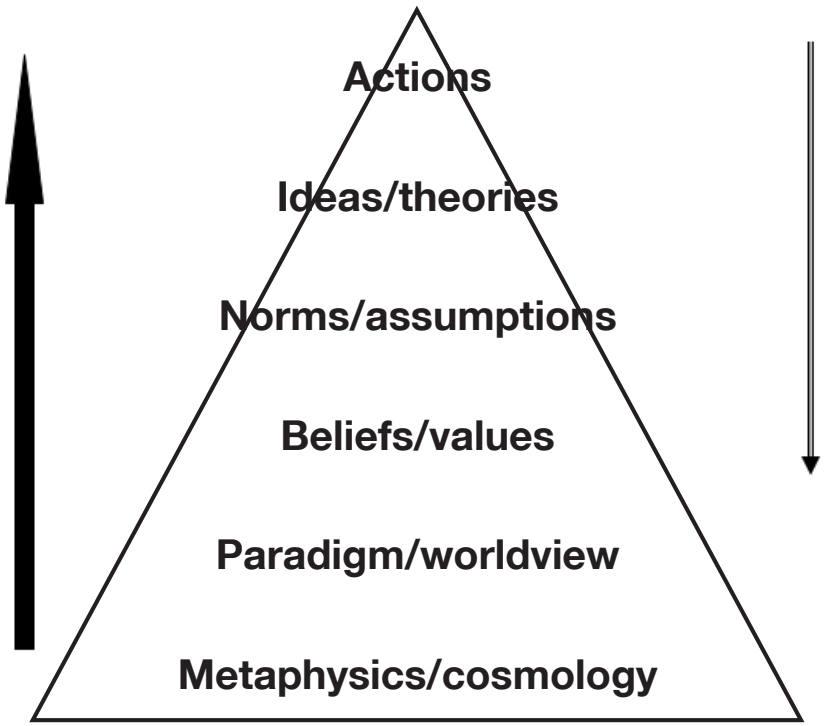
Further, he says it refers to the process 'by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive' (Mezirow, 2000, p.7). Mezirow's view that transformative learning involves generating a frame of reference that is more inclusive and dependable implies an expanded consciousness, more in keeping with and cognisant of the contextual reality of the learning situation. In this, Mezirow's view of transformative learning echoes others' similar views. In particular, it has some resonance with Freire's (1972) concept of conscientization which has been very influential in critical pedagogy discourse and emancipatory education circles. Both Mezirow's and Freire's work are reflected in the approach of the Centre for Transformative Learning in Toronto which echoes O'Sullivan's view (reflected by Morrell & O'Connor, 2002) that transformative learning involves:

> a deep structural shift in the basic premises of thought, feelings and actions. It is a shift of consciousness that dramatically and permanently alters our way of being in the world. Such a shift involves our understanding of ourselves and our self-location: our relationships with other humans and with the natural world.
> (Morrell & O'Connor, 2002, p.xvii)

They go on to say that this involves a changing understanding of power relations, of body awareness, of the possibility of alternative approaches to living, and a 'sense of possibilities for social justice, peace and personal joy' (2002, xvii). Importantly then, transformative learning implies both an inner and outer dimension, a shift in consciousness to embrace an extended sense of relationality. Similarly, Reason suggests that it 'implies an experience of self much more fully in transaction with others and with the environment, a participatory self or participatory mind' (Reason, 1995, p.3).

At this point it will be useful to introduce the idea of 'levels of knowing' (Sterling, 2003), which is based on a systems view of thought (Bohm, 1992; Figure 1). This helps illuminate the point that learning can involve and affect different levels of consciousness.

Figure 1: Levels of knowing



This model of nesting systems suggests that deeper perceptions and conceptions inform, influence and help manifest more immediate ideas and they, in turn, affect more everyday thoughts and actions. A second point arising from this model is that the influence of deeper assumptions may not be consciously recognised. Our assumptions are operative, but may lay largely unexamined. To give an illustration, Lawton (1989) suggests that:

> Every statement that a teacher makes in a classroom is value-laden, connected with ideas about the purpose of education, probably connected with more general values and beliefs, and maybe with the purpose of life. So it is with educational planners and curriculum developers, whether they realise it or not. (Lawton, 1989, p.3)

I would suggest that this model is valid both at the level of individual knowing and collective or cultural knowing. One of the important implications of this model is that it raises questions about learning. Whilst the word 'learning' tends to be used with the assumption that discussants generally share the same perception of what it means,

this model raises an important and often missed dimension: that we can learn at *different levels* of knowing and meaning. Transformative learning is normally taken to mean learning which touches our deeper levels of knowing and meaning, and, by so doing, then influences our more immediate and concrete levels of knowing, perception, and action. At this point, it will be helpful to look at Gregory Bateson's work on learning, which does much to clarify what transformative learning can imply. An illuminative theory was developed by Bateson from Whitehead & Russell's theory of logical types, and concerns levels of change and learning. Bateson distinguished three orders of learning and change (in addition to 'zero learning'), corresponding with increases in learning capacity, and these have been adopted variously by learning and change theorists, particularly in the field of systemic learning and organizational change, such as Argyris & Schön (1996; single and double loop learning), and Ison & Russell (2000; first order and second order change).

First-order change refers to doing 'more of the same', that is, change within particular boundaries and without examining or changing the assumptions or values that inform what you are doing or thinking. In this sort of learning, meaning is assumed or given and relates primarily to the external objective world. *Second-order change* refers to a significant change in thinking or in what you are doing as a result of examining assumptions and values, and is about understanding the inner or subjective world. In this sort of learning, meaning is recognised and negotiated amongst those involved. Other terms which theorists use and which distinguish between these two levels are, respectively: *basic learning* and *learning about learning; learning* and *meta-learning*; and *cognition* and *meta-cognition*. This two-level model sounds very simple, but it makes a very important distinction and has significant implications for any person or group interested in anything more than first order change. From this distinction it is possible to see that most learning promoted in formal education in schools and higher education is of the first order variety, being content-led and externally focussed, and often delivered through transmissive pedagogies within a consensually accepted framework of values and purposes. It is concerned fundamentally with 'information transfer' – learning about things – and does not normally challenge the assumptions or beliefs of the learner. This is maintenance learning – adjustments or adaptations are made to keep things stable in the face of change; what Clark (1989, p.236) calls 'change within changelessness'. This is not of itself a 'bad thing' and may be perfectly valid in many teaching and learning situations; however, if the need for transformative learning is recognised by progressive educators, an institutional tradition of first order teaching and learning is an obstacle to deeper change.

Second-order learning is more challenging and involves the learner (or learning organisation) critically examining, and if necessary changing, his/her/its beliefs, values and assumptions. Therefore, this learning experience can be said to be deeper. It is more difficult and often uncomfortable for the learner because it is challenging and, because it involves reflecting critically on learning and change that takes place at the first-order level, it generates an awareness and understanding that goes beyond that level. Because of this, such learning is likely to be more permanent. In shorthand, and applied to organisations, first-order learning and change is often said to be about *doing things better*, that is, it is often concerned with efficiency and effectiveness, whether applied to the individual or to the institution. But it does not question the 'things', the activities and the assumptions which lead to those activities. Second-order change – by contrast – is concerned with *doing better things*, that is, it raises questions of purpose and values; it asks 'efficiency and effectiveness in the service of what? Or to what end?' Such change involves bringing the assumptions to light that underlie first order learning, and critically assessing them, invoking questions of values and ethics. It is important to state that some theorists use the term 'transformative learning' to describe experiences which might be said to be equivalent to second order learning. For example, Cranton (2009) suggests that 'Exposure to alternatives encourages students to critically question their assumptions, beliefs, and values, and when this leads to a shift in the way they see themselves or things in the world, they have engaged in transformative learning.'

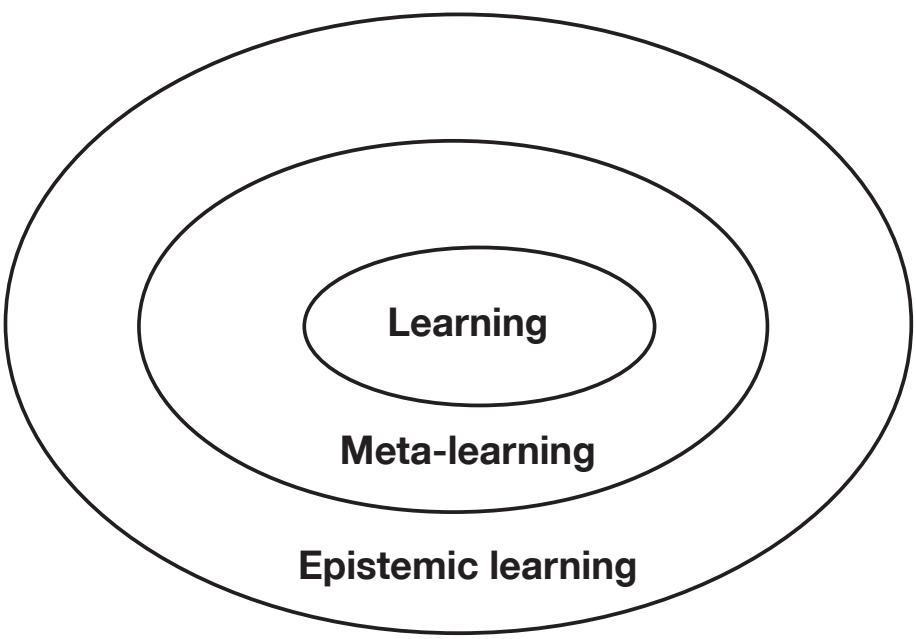
However, Bateson's model distinguished a third learning level, which may said to be epistemic learning; that is, it involves a shift of epistemology or operative way of knowing and thinking that frames people's perception of, and interaction with, the world. This entails 'thinking about and evaluating the foundations of thought itself' (Bawden & Packham, 1993, p.6); the experience of seeing our worldview rather than seeing *with* our worldview so that we can be more open to and draw upon other views and possibilities. The case for transformative learning is that learning *within* paradigm does not change the paradigm, whereas learning that facilitates a fundamental recognition of paradigm and enables paradigmatic reconstruction is by definition transformative. This level of learning, or third order change, is consistent with O'Sullivan's view of transformative learning as a dramatic shift of consciousness. Similarly, many commentators see this as involving perceptual change and coming to a transpersonal ethical and participative sensibility. In brief, an expansion of consciousness and a more relational or ecological way of seeing arises, inspiring different sets of values and practices. Indeed, it is important to state that, according to Bateson's theory and others'

theories derived from the Bateson model, learning levels are seen as nested systems with higher order learning affecting levels below (Figure 2). Thus second order or meta-learning experience changes thinking and action in the first order domain, whilst epistemic learning causes changes in the second and first order domains. Put more simply, as Fear *et al*. argue (2006),

> transformations in the way things are done depend on transformations in the way things are *understood* – in the worldview or perspective assumptions that condition those understandings. (Authors' italics)
> (Fear et al., 2006, p.189)

Both are linked, both important: as Fear *et al*. (2006, p.225) suggest, while critical thinking and reflection is an essential prerequisite for transformative learning to occur, it is not by itself sufficient unless it results in transformative, sustainable and responsible action.

Figure 2: Learning levels as nested systems



The three learning levels can also be represented as in Table 1, with the arrow representing a shift towards higher order learning, (which, perhaps confusingly, is also termed deeper learning by some).

Table 1: Levels of learning

Orders of change/learning	**Seeks/leads to:**	**Can be labelled as:**
First order change Cognition	Effectiveness/ Efficiency	'Doing things better' Conformative
Second order change Meta-cognition	Examining and changing assumptions	'Doing better things' Reformative
Third order change Epistemic learning	Paradigm change	'Seeing things differently' Transformative

Whilst a number of commentators interpret Bateson's model in different ways, it affords a potent and helpful insight on the possibilities of, and constraints on, the higher order learning experience that the crisis of sustainability suggests is necessary in terms of calls for a change of worldview (Lyle, 1994). Not least, it indicates that a shift of perception from first order to second order learning, or from second order to third order, often involves resistance on the part of the learner, for it poses a significant challenge to existing beliefs and ideas, reconstruction of meaning, discomfort and difficulty, but also sometimes excitement. So transformative learning, in the epistemic sense, is *difficult* – first, to facilitate or design as a learning experience, and second, as a felt experience for the learner. With reference to the Figure 1 'levels of knowing', it is clearly much easier to affect change at the more immediate level, than at the deep level of knowing. Epistemic learning can be deeply uncomfortable, because it involves a restructuring of basic assumptions caused by the recognition of 'incoherence' between assumptions and experience. This crisis experience can be traumatic – although for some it is inspiring – and can be a lengthy process over time as mental models undergo radical change (Sterling & Baines, 2002). This, incidentally, rather counters the simple adage that 'learning should always be fun'. As Ison & Stowell (2000) suggest that:

> each learner goes through a period of chaos, confusion and being overwhelmed by complexity before new conceptual information brings about a spontaneous restructuring of mental models at a higher level of complexity thereby allowing a learner to understand concepts that were formally opaque.
> (Ison & Stowell, 2000, p.3)

Similarly, O'Sullivan states (2002):

> The breakdown, or crisis, motivates the system to self-organise in more inclusive ways of knowing, embracing, and integrating data of which it had been previously unconscious.
> (O'Sullivan, 2002, p.4)

Journeying through learning levels, whether we are focussing on the individual, or the institution, or society as a whole, entails a similar difficult path. This journey through higher orders of learning involves experience of:

- greater challenge/threat to existing beliefs/ideas – and so more resistance;
- greater 'perturbation' required to stimulate learning and the emergence of new order;
- greater reconstruction of meaning;
- greater engagement and breadth of response in the learner;
- achievement of greater flexibility and less rigidity of thought;
- higher order of consciousness or mindfulness;
- more emergence as a result of learning;
- the difference between 'unwitting self-reference' and knowing self-reference and therefore the possibility of transcendence.

(Sterling, 2003, p.286)

Transformative practice

This rather theoretical model is borne out in practice by others. Hence, a model of progressive change is reported by Hicks (2002), drawing on the work of Rogers (1994) whose work with students on global issues suggested a learning cycle over the period of a one-year course. This research, says Hicks, suggests that learning should involve 'three awakenings – of the mind, the heart and the soul ... (if) truly effective teaching' is to take place (2002, p.102). Rogers suggests that learning can involve the *cognitive dimension* (which is traditionally seen as the core of teaching) which involves the intellect; the *affective dimension*, when intellectual knowing moves to a personal and connected knowing involving the emotions; an *existential dimension* where students are faced with questioning their values and ways of living and with the challenge of the reconstruction of their own sense of self; an *empowerment dimension*, which, if the existential crisis is resolved, involves a sense of responsibility, commitment and direction; and an *action dimension*, which, if the questions raised by the first four dimensions have been resolved, involves the development of informed choices at personal, social and political levels.

Both Hicks (2002, drawing on Rogers' work, and on his own work with global futures students) and O'Sullivan (2002) point to the nature of denial, despair and grief in relation to coming to terms with the planetary crisis. The mainstream emphasis on cognitive learning, with a little 'values education' thrown in, is simply insufficient to meet this challenge. Indeed, Hicks (2002, p.108) contends that 'many educators often only make things worse for students by teaching about global issues as this were solely a cognitive endeavour'. Rather, Hicks seeks a holistic learning experience, and he quotes Joanna Macy's despair work which allows people to engage with their feelings and pain for the world in order to reconnect with it. A true sense of empowerment, says Hicks, must come from both head and heart, 'but this requires educators who have also worked through these issues for themselves' (2002, p.108).

This brings us to a key point, which concerns how far formal education systems and educators working within them are able to design learning systems conducive to transformative learning experiences, even assuming that such experiences fitted the curriculum goals of the institution. An Open University systems practice network sums up the challenges as follows:

> To understand and deliver a pedagogy which enables and provokes students to move across levels of epistemic competence is in itself challenging. To do so requires an awareness on the part of the curriculum designer and personal tutor so that they can facilitate these changes … it is not always clear that academics and tutors have these competencies themselves.
> (SPMC, 2002)

To help facilitate transformative learning then, there has to be intent on the part of the designers/teachers, born of their own learning, to construct a learning system through which they can encourage others to explore epistemic change as a collaborative inquiry. Thus, there is a 'two-level' learning process involved: the new 'meaning making' of the designers/teachers facilitates the new 'meaning making' of others. This is what Roling (2000, p.52) refers to as 'double hermeneutics'. In brief, it appears that transformative learning arises from the interaction between the *state of readiness* of the learner and the *quality of the learning environment* to yield a particular learning experience as an emergent property of that interaction.
Documented examples of educational settings where transformative learning has been central to intent, and examples of research studies on transformative learning practices, are relatively few compared with the level of theoretical discussion (Taylor, 2007). One well-known example outside the mainstream is Schumacher College,

in Devon, a small independently-run institution whose strapline is 'Transformative Learning for Sustainable Living'. On the basis of the author's long association with the College, and research undertaken, this is a justifiable claim. The 2002 evaluation (Sterling & Baines, 2002) suggests that transformative learning experiences – which by their nature cannot be guaranteed – are commonly facilitated by several factors including the College's both overt and implicit ethos and connectivity, so that virtually all aspects of its operation work synergetically. This involves small group size, intensive residential experience, and conducive environment, building and location. Such conditions are hard to match or reproduce in mainstream institutions, and it might be maybe that radical establishments such as Schumacher College need to play an engaged role in advancing, testing and mapping out new purposes, research and pedagogies that higher education could bring on board more centrally (Blake & Sterling, forthcoming). On-going partnerships relating to the transition movement (<www.transitionnetwork.org>) between the University of Plymouth and Schumacher College are currently opening up such possibilities.

One of the best documented accounts of experiments to foster transformative learning is the 20-year case study at the Centre for Systemic Development, Hawkesbury College, Australia (Bawden, 2005). The leaders of the Hawkesbury College work approached this by developing what they termed 'methodological pluralism', which was a conscious attempt to transcend 'the epistemologies of positivism and reductionism' (Bawden & Packham, 1993, p.4), which they saw as dominating mainstream educational thinking and practices. Informed by learning level theory by a number of writers including Bateson (1972) and Salner (1986), the team sought to effect an holistic educational paradigm, drawing consciously on soft systems methodology, experiential learning and systemic action research. Bawden (1997, p.1) writes, 'together we would learn how to see the world differently, and in the process, discover just how difficult a transformation this is'.

Also working in Australia, Cochrane *et al.* (2007, p.335) were directly inspired by Bawden's work at Hawkesbury and used Bateson's learning levels model to help them, as curriculum designers, to develop a course on agricultural education 'with the potential to create holistic thinkers who were well equipped to play a significant role as ecological agriculturalists'. Course components were therefore designed to address the three levels: for example, understanding ecosystems and management (Learning I); interpersonal skills, change management, ecopsychology (Learning II); and the empathetic relationship between humans and environment, value systems (Learning III). Importantly,

the pedagogies employed changed through the levels, to support the qualities of learning sought. Commenting on the Learning III component, Cochrane *et al*. state:

> The pathway to this end could not be achieved by the rational and analytical modes, but through their opposite – imaginative and intuitive – modes.
> (Cochrane *et al.*, 2007, p.361)

In the UK, one example, known to the author, where transformative learning is explicitly striven for is that of the Sustainable Development programme at the University of St. Andrews, an innovative and award-winning interdisciplinary initiative where varied pedagogies are employed to help the students experience and articulate different forms of knowing including but beyond intellectual knowing (Heron, 1996). The Programme Handbook (University of St. Andrews, 2009) states that the programme is designed 'to encourage you, and us, to develop as 'whole people' as well as to meet 'teaching targets' – recognising the paradox that this represents…. There are times when learning in this way will be more challenging than merely receiving and regurgitating information.' In this way, the approach adopted by the University of St. Andrews is consistent with Taylor's view that transformative learning is typically associated with learning experiences that 'are direct, personally engaging, and stimulate reflection upon experience' (Taylor, 2007, p.182).

Conclusion

It is clear that transformative learning is challenging for the individual. It is also clear that designing transformative educational experiences and leaning systems is also challenging, both in the immediate learning situation but also in the context of dominant educational paradigms and structures that essentially are not themselves transformed or sufficiently critically reflexive. Not least it challenges predominant norms in teaching and learning policies and practices. Indeed, Moore (2005) asks whether higher education is ready for transformative learning, and whether students are mentally and emotionally prepared for this type of learning – and 'whether the academic institution has the ability to foster and nurture these type of experiences' (p.86). By contrast, Cochrane *et al*. (2007, p.363) state that, in their experience, 'making allowance for the emergence of the emotional and spiritual in people is not difficult. The difficulty lies in convincing others that this has to happen in the first place'.

One way forward might be to look beyond the confines and purview of the higher education sector to what is going in the 'real world'. Homer-Dixon (2006, p.29) points to current trends and concludes that 'surprise, instability, and extraordinary events will be regular features in our lives' and that such events will 'transform our outlook forever'. Put another way, transformative social learning – albeit reactive – whether precipitated by energy price shocks, health scares, terrorism or global warming for example, is already with us, shaking public assumptions. Under such conditions, it behoves academe to be anticipative, to re-examine how it can move towards more transformative, more socially engaged and future oriented models of teaching and learning that can nurture positive personal and social development. As Bawden (2008) challenges:

> higher education is duty bound to do all it can to transform prevailing epistemic assumptions and to liberate human and social development in the further pursuit of the considered and inclusively responsible life.
> (Bawden, 2008, p.65)

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About the Author

Stephen Sterling is Professor of Sustainability Education, Centre for Sustainable Futures (CSF) at the University of Plymouth, and Senior Advisor to the Higher Education Academy Education for Sustainable Development (ESD) Project. His research interest is in advancing the interrelationships between ecological thinking, systemic change, and learning at individual and institutional scales to help meet the challenge of accelerating the educational response to the sustainability agenda. His work at the CSF involves leading the research team, whilst his work for the Academy centres on advising the ESD Project on programmes and strategy in supporting curriculum change across the higher education sector.