

Looking at the implications of sustainability for learning and teaching

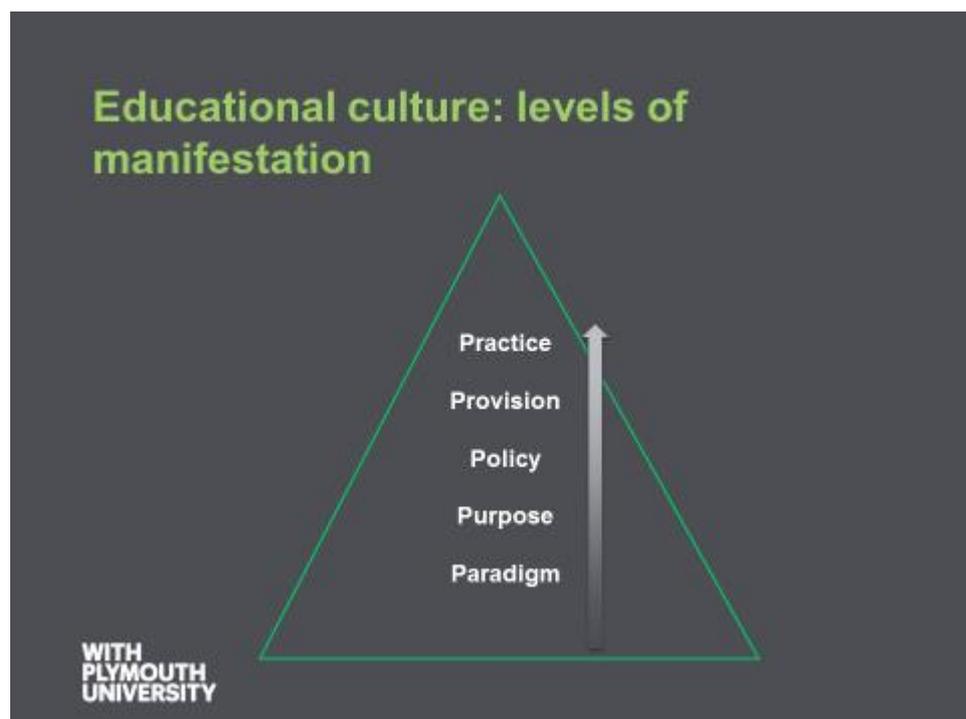
Paradigm

In seeking to infuse sustainability ideas into teaching and learning, it is necessary to try to understand and clarify fundamental assumptions and starting points, both of the prevailing system and of suggested alternatives.

This fundamental paradigmatic level is usually addressed through looking at the dimensions of *epistemology*, *ontology* and *methodology*, and associated root metaphor. If we take the argument that the sustainability paradigm is underlain by holism, systemic thinking and an ecological or relational orientation, it is possible to suggest an essential pattern as follows:

PARADIGM	CONVENTIONAL	EMERGENT
METAPHOR	Mechanism	Ecology/living systems
EPISTEMOLOGY	Objectivist	Participative/critical subjectivity
ONTOLOGY	Reductionist	Holistic/integrative
METHODOLOGY	Empiricist/reductive	Experiential/systemic

Such an analysis allows some in-depth thinking about fundamental influences on notions of key 'P's - being Policy, Purpose, and Provision and Practice. These 'P's can be seen as having an hierarchical relationship – so that ideas at a lower level influence manifestation at a higher level. For example, conceptions of the Purpose of education clearly influence conceptions of what Policy should or might be.



Similarly, a conventional educational paradigm gives rise to qualitatively different educational purposes, policies and practices, compared to a more systemic and ecological framework.

So we can suggest polar tables as ‘thinking tools’ and discussion starters, on various aspects of an institution’s operation. The following is revised and expanded from Sterling 2001, 59.

CONVENTIONAL VIEW	ECOLOGICAL VIEW
LEARNING AND PEDAGOGY	
<u>View of teaching and learning</u>	
<ul style="list-style-type: none"> • Transmissive/instructive 	<ul style="list-style-type: none"> • Transformative/constructive
<ul style="list-style-type: none"> • Product and output oriented: qualifications, papers published, graduates etc 	<ul style="list-style-type: none"> • Process and outcome oriented: more emphasis on process, capacity building and action
<ul style="list-style-type: none"> • Curriculum is prescriptive and predetermined 	<ul style="list-style-type: none"> • Curriculum is indicative and partially emergent
<ul style="list-style-type: none"> • Emphasis on theory 	<ul style="list-style-type: none"> • Emphasis on experience linking theory and practice dynamically
<ul style="list-style-type: none"> • Emphasis on teaching through delivery 	<ul style="list-style-type: none"> • Systemic view and co-inquiry: teachers also learners, learners also teachers
<ul style="list-style-type: none"> • Functional competence valued 	<ul style="list-style-type: none"> • Functional, critical and creative competencies valued
<u>View of learner</u>	
<ul style="list-style-type: none"> • As a cognitive being 	<ul style="list-style-type: none"> • As a whole person with full range of needs and capacities
<ul style="list-style-type: none"> • Deficiency model 	<ul style="list-style-type: none"> • Appreciative view: existing knowledge, beliefs, feelings, skills etc valued
<ul style="list-style-type: none"> • Learners largely undifferentiated 	<ul style="list-style-type: none"> • Differentiated needs recognised
<ul style="list-style-type: none"> • Intellect valued 	<ul style="list-style-type: none"> • Intellect, intuition, and capability valued
<ul style="list-style-type: none"> • Logical and linguistic intelligence emphasised 	<ul style="list-style-type: none"> • Multiple intelligences worked with
<ul style="list-style-type: none"> • Teachers as experts or technicians 	<ul style="list-style-type: none"> • Teachers as reflective practitioners, facilitators and change agents
<ul style="list-style-type: none"> • Learners as individuals 	<ul style="list-style-type: none"> • Groups, organisations and communities also learn
<u>Teaching and learning styles</u>	
<ul style="list-style-type: none"> • Teacher as expert 	<ul style="list-style-type: none"> • Teacher as reflective practitioner engaged in continuous action research
<ul style="list-style-type: none"> • Teaching is staff based and theory driven 	<ul style="list-style-type: none"> • Teaching includes outside input, real world experience and is issues driven
<ul style="list-style-type: none"> • Emphasis on cognitive experience of learner 	<ul style="list-style-type: none"> • Affective, spiritual, manual and physical experience of learner is recognised
<ul style="list-style-type: none"> • Passive instruction, teacher centered 	<ul style="list-style-type: none"> • Active learning styles, student centered
<ul style="list-style-type: none"> • Non-critical inquiry 	<ul style="list-style-type: none"> • Critical, appreciative and creative inquiry
<ul style="list-style-type: none"> • Individual inquiry 	<ul style="list-style-type: none"> • Cooperative inquiry
<ul style="list-style-type: none"> • Restricted range of methods with didactic methods being most common 	<ul style="list-style-type: none"> • Wide range of methods and tools used
<u>View of learning</u>	
<ul style="list-style-type: none"> • Purposes of learning are unstated or narrowly defined (eg. as preparation for economic life) 	<ul style="list-style-type: none"> • Purposes of learning are ethical and stated as such in relation to contemporary social,

	economic and ecological contexts and major issues of sustainability, viability, and futures
• Simple learning (first order)	• Also critical and epistemic learning (second/third order)
• Non-reflexive, causal	• Reflexive, iterative
• Emphasis on knowledge accumulation	• Emphasis on ability to handle knowledge critically and appropriately
• Meaning is given	• Meaning is constructed and negotiated
• Little sense of community as a learning system, or of the wider learning organisation	• Aspiration to design critical learning systems and communities, and develop capacity of the learning organisation.
• Learning needs to be effective	• Needs to be meaningful and aspires to be transformational
• No sense of emergence in the learning environment/system	• Strong sense of emergence in the learning environment/system

It is possible to extend this model to other areas including curriculum, evaluation and assessment, and management.

This model implies the desirability of a *change of emphasis* from the left hand column to the right hand, but does not imply the negation or wholesale rejection of the conventional paradigm – even if this were possible.

Implications for University of Plymouth

The polar model above provides a summary template for evaluating how far the existing Teaching and Learning Strategy reflects either paradigm, and some outline guidance on what a transition towards a more sustainability-oriented teaching and learning policy might entail.

Other important dimensions

Other critical aspects that are germane to this task include:

- A clear rationale for sustainability, not least the ecological-social-economic context
- A change theory or strategy for any reorientation of policy and practice in the university
- Examples of knowledge, skills and values that are being reflected in the 'sustainability literacy' debate re graduate attributes (eg. HEA 2006).

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References

Sterling, S, (2001) *Sustainable Education – Re-Visioning Learning and Change*, Green Books, Totnes. ISBN 1 870098 99 4

<https://www.greenbooks.co.uk/sustainable-education>

HEA, (2006) *Sustainable development in higher education – current practice and future developments: A progress report for Senior Managers in higher education*, Higher Education Academy, York.