Educating for a sustainable society – why we don't, and how we might: an ecological view of the university in a volatile age (15 propositions)

Dr Stephen Sterling

Schumacher Reader in Education for Sustainability

UCL 18th September 2008

Centre for Sustainable Futures

Educating for a sustainable society

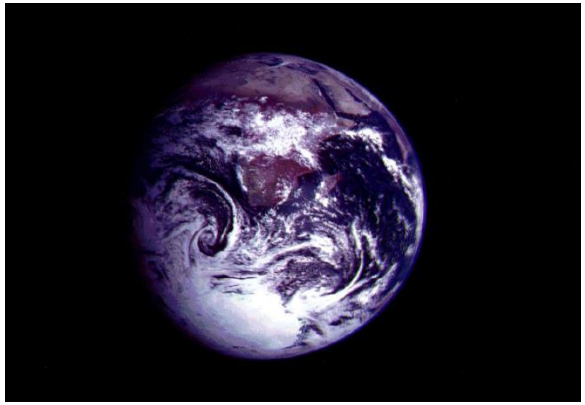
1. Why we don't: *challenge and response-ability*

2. How we might: *worldviews, paradigm change and learning by design*

Educating for a sustainable society

Why we don't:

challenge and response-ability



‘What Good is a Rigorous Research Agenda if You Don't Have a Decent Planet to Put it On?’

David Orr

Ecological Literacy: Education and the Transition to a Postmodern World, 1992

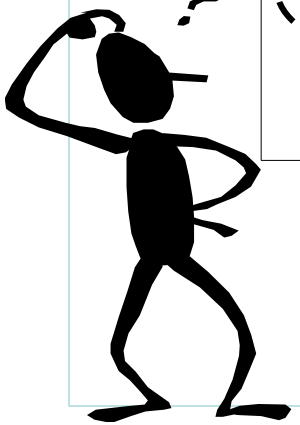
...and Thoreau

Surviving the 'Anthropocene'

'It is now 20 years since the publication of the Brundtland report on sustainable development, and nearly every significant global sustainability indicator has stalled or gone backwards during the past two decades.'

- Will Steffen: 'The great challenges of the 21st century', Stockholm Resilience Centre, October 2007

The ‘new’ conditions



global warming

peak oil

insecurities

unsustainability

fundamentalism

uncertainty

dense interdependence

stresses

globalisation

population pressures

complexity

ecosystem degradation

inequity

overconsumption

And…

‘Reinventing the university’

‘…it is pre-eminently in the universities that we should be thinking hardest about the implications of this whole world-system for our common life and its future, and bringing the best of our available intelligence to bear on the necessary changes. If not there, where? If that’s not the business of universities in the early twenty-first century, what on earth are they for?’

-John Foster, 2007

(review of M’Gonigle and Starke’s *Planet U*)

HEFCE's view

'The greatest contribution HE can make to SD is by enabling students to acquire the skills and knowledge that allow them to make a lasting difference.'

The Higher Education Funding Council for England (2008) *Sustainable Development in Higher Education – Consultation on 2008 update to strategic statement and action plan,p14*

www.hefce.ac.uk/pubs/hefce/2005/05_28/

EUSD?

‘at present most of our universities are still leading the way in advancing the kind of thinking, teaching and research that…accelerates un-sustainability’ (Wals 2008, 31).

Wals, A (2008) (ed.) *From cosmetic reform to meaningful integration: implementing education for sustainable development in higher education institutes - the state of affairs in six European countries*, DHO, Amsterdam.

‘The biggest challenge for educationalists is the proposition that education for sustainable development cannot simply be added onto existing learning, but requires a ***systemic change to the learning process and priorities*** in education’.

From Here to Sustainability
Real World Coalition, 2001

‘If we examine the extent to which HEIs have actually reoriented themselves such that environmental and sustainability issues now pervade the vision, ethos, thinking and work of the institution, then the conclusion probably has to be that very little has happened in most cases.’

- Scott and Sterling, (2007) *England Report* for International Meeting on ESD in HE, Amsterdam

‘Massive institutional failure’

‘..we haven’t learned how to mould, bend, and transform our centuries old patterns of thinking, conversing, and institutionalising to fit the realities of today.’

Otto Scharmer (2006) *Theory U: Leading from the Future as it Emerges*

- ‘Contemporary economic, political and cultural institutions are ill-suited for coping with the destabilizing environmental, security and social tensions that they have created.’

Otto Scharmer 2006

Theory U: Leading from the Future as it Emerges

Big questions

- Do universities largely advance the kind of thinking, teaching and research that contribute to *unsustainability,* if so, why?
- What patterns of thinking lie beneath commonly occurring resistances to change?
- What kind of learning and change needs to occur within institutional policy and practice so that critical innovation and sustainability competencies, understandings and values are more likely to be fostered amongst staff and students?
- What might such qualities look like?
- How do we balance practicability with urgency?

Rising interest

- HEFCE's SD Policy and Strategy (2005) and new Action Plan
- HE Academy ESD Project – *17 Subject Centres engaged in ESD*
- Sustainability CETLs and leader HEIs
- People and Planet 'Green League'
- Future Leaders Survey
- Green Gown Awards
- Universities UK *Greening Spires,* and new UUK SD Group
- New DIUS Action SD Action Plan

HEFCE 'Strategic Review' of SD in HE

- 'a major challenge is the institutionalisation of (sustainable development), so that it ceases to be wholly dependent on the initiators (who may move on) and so that connections can be made across the HEI'. (xi)

- 'There is ... little evidence of generic 'successful processes' which can be used to embed sustainable development engagement within institutions' (p74).

Policy Studies Institute / CREE / PA Consulting (2007) *Sustainable Development in Higher Education in England,* Policy Studies Institute, London.

CSF's goal at U of Plymouth

'To develop the transformative potential of higher education at the University of Plymouth and beyond for building towards a sustainable future.'

Centre for Sustainable Futures, University of Plymouth

UP corporate plan

‘The university is committed to transforming itself from an institution characterised by significant areas of achievement and excellence in sustainability adherence and provision, to an institution modelling university-wide achievement and excellence.....‘

University of Plymouth Corporate plan 2004-9
Transforming Lives Through Knowledge Interim Review 2007

Proposition i

- *The world is in a precarious and vulnerable state.*
- *Decisions taken collectively over the next 10-20 years will make a critical difference to living conditions on the Earth for future generations and to the options available to them.*

Proposition ii

- *We are faced with an unprecedented social learning challenge, within which formal education should play a full part.*

- *Deep problems require deep learning, in order to move from 'reproduction' to 'remedy'.*

Barriers

Size of institution

Crowded curriculum

Perceived irrelevance

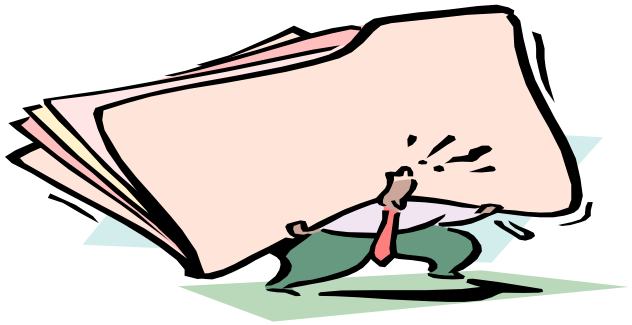
Limited staff awareness and/or expertise

Limited institutional commitment

Too demanding/time issues

Limited support/resources

Limited commitment from external stakeholders



Types of barriers

- **Paradigmatic/psychological**
- **Policy/purpose related**
- **Structural (governance, compartmentalisation etc)**
- **Resource/information deficiency**

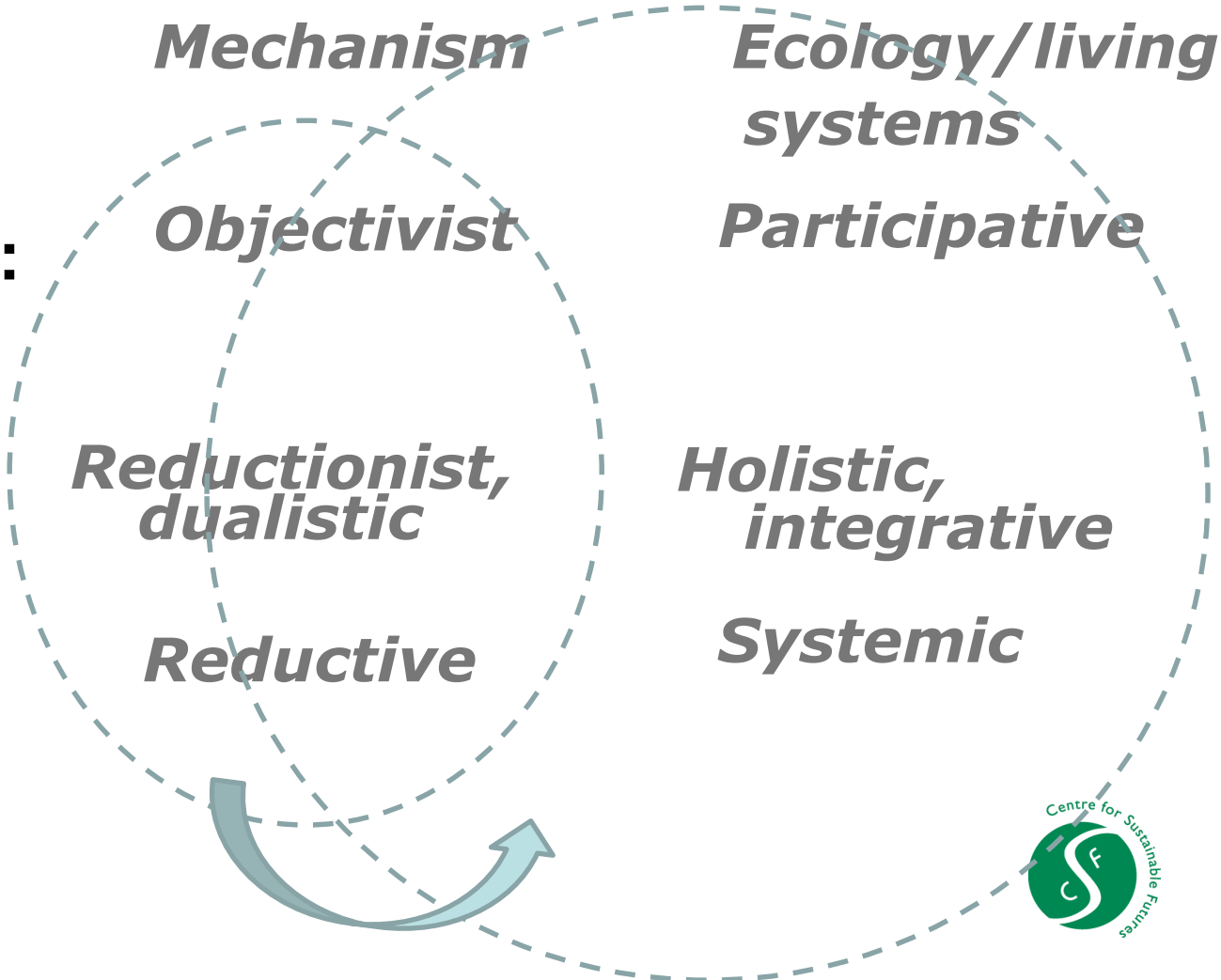
Educating for a sustainable society

How we might:

worldviews, paradigm change and learning by design

Key cultural worldviews

Metaphor:	***Mechanism***	***Ecology/living systems***
Epistemology:	***Objectivist***	***Participative***
Ontology:	***Reductionist, dualistic***	***Holistic, integrative***
Methodology:	***Reductive***	***Systemic***



‘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.’

Paul Raskin, 2006

World Lines, - Pathways, Pivots and the Global Future, Tellus Institute

Habits of thought

‘I believe that (the) massive aggregation of threats to man and his ecological systems arises out of errors in our habits of thought at deep and partly unconscious levels’

Gregory Bateson (1972, 463)

Ecological worldview

.....ecology has left the biology departments of universities and migrated into every consciousness. The scientific term has turned into a worldview. And as worldview, it carries the promise of reuniting what has been fragmented, of healing what has been torn apart - in short of caring for the whole.

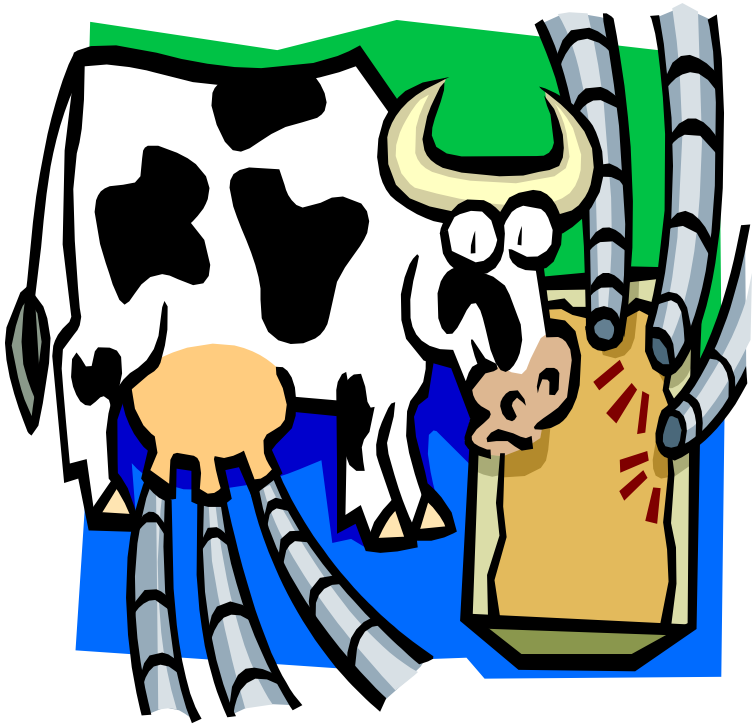
Wolfgang Sachs(1999) *Planet Dialectics,* Zed Books, London.

Proposition iii

An emerging ecological (relational/systemic) paradigm presents a sane and hopeful evolutionary pathway, necessary to the conditions we now face, with the power to transcend the disintegrative effects of modernism and the disempowering relativism of deconstructive postmodernism.

Centre for Sustainable Futures

World as machine...



'The world partly becomes - comes to be - how it is imagined.'

- Gregory Bateson, 1980

The primacy of relationship

‘All thinking worthy of the name now must be ecological.’

- Lewis Mumford, 1964

Daunting agenda…exciting possibilities’

Nine challenges

- Power civilisation by sunlight
- Grow food and fibre sustainably
- Dis-invent the concept of waste
- Preserve biodiversity
- Restore ruined ecologies
- Reduce materials, water and land use per head
- Rethink the political basis of modern societies
- Develop economies that can be sustained within nature’s limits
- Distribute wealth fairly within and between generations

- David Orr

Centre for Sustainable Futures

Proposition iv

Whilst there is some evidence of a change of perception taking place amongst public and policymakers, we seem to be relying on learning by default (reactive learning) in the face of developing crisis, rather than learning by design (anticipative learning).

Goal of UN DESD

'to integrate the values inherent in sustainable development into all aspects of learning in order to encourage changes in behaviour that allow for a more sustainable and just society for all.'

This involves learning *'the values, behaviour and lifestyles required for a sustainable future and for positive societal transformation'*.

Proposition v

- *Despite increasing pockets of response, taken as a whole, formal education remains more a part of the problem than part of the solution*
- *Time is shortening for education to make a significant difference*

Proposition vi

The informing mechanistic metaphor and dominant techno-scientific paradigm supports a neo-liberal view of education -

instrumental, managerial and utilitarian (and the language which goes with it).

Proposition vii

- *Most educational institutions manifest and help perpetuate a paradigmatic model that belongs to the past*
- *The big challenge is how to move from a limited conception and practice of 'education for sustainability' towards 'sustainable education' as a significant change of educational culture and paradigm*

Rough educational paradigm map

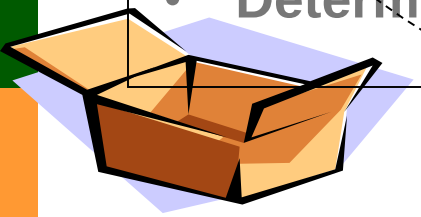
Educational paradigm	*Positivist*	*Interpretivist; Constructivist*	*Critical; radical*	*Poststructural*	*Participative*
Role of educator	Instruction	Facilitation	Critical pedagogy/ 'transformative intellectual'	Deconstruct-ion	Mediation, mentoring/ 'invitational' leadership
Curriculum	Prescribed	Constructivist; Learner centered	Issues based	Pluralist	Indicative, emergent
Pedagogy	Delivery	Transactional	Critical pedagogy	Deconstruc - tive	Co-inquiry

Cultural worldview/metaphor

Mechanistic-modernist… …….Postmodern…. Ecological…

Two ways of thinking...

- Problem-solving
- Analysis
- Reductionism
- Closed cause-effect
- Atomism/segregative
- Narrow boundaries
- Objectivism
- Dualism
- Rationalism
- Determinism

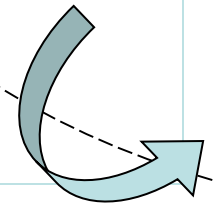


- Reframing /alleviation
- Synthesis
- Holism
- Multiple influences through time and space
- Integrative
- Extension of boundaries
- Critical subjectivity
- Pluralism / duality
- Rational / non-rational ways of knowing
- Uncertainty, tolerance of ambiguity

Centre for Sustainable Futures

Effects on educational outlook

- *Mechanistic* view of education
- Reductionist view of knowledge
- Deficit view of learner
- Transmissive model of pedagogy



- *Ecological* (relational) view of education
- Holistic view of knowledge
- Appreciative view of learner
- Transactional or transformative view of pedagogy

Proposition viii

- *Paradigm change (at personal, organisational and social levels) involves a profound realisation of the mismatch and inadequacy of the existing paradigm against experience.*
- *Paradigms are resilient: deep challenge evokes deep resistance.*

Proposition ix

There are four levels of learning response to a deep challenge:

- *none (denial/ignorance),*
- *accommodation (1st order),*
- *reformation (2nd order),*
- *transformation (3rd order)*

Centre for Sustainable Futures

Proposition x

There is always a tendency for significant challenges (such as sustainability or education for sustainability) to be understood and accommodated within the norms of the existing system - rather than change the system to be congruent with the challenge.

Proposition xi

- *Sustainability requires at least second order learning amongst significant sections of society, and amongst institutional actors and students: this involves a fundamental questioning and reordering of assumptions*
- *Socio-economic-ecological conditions are currently such that paradigm challenge is happening and change is perhaps possible, particularly at the individual level.*

Double learning challenge

- *Structured learning:*

  - intentioned learning amongst students in formal education which arises from educational policies and practices

- *Attendant learning*:

  - the social learning response to sustainability in organisations and institutions – policymakers, academics, support staff etc.

Proposition xii

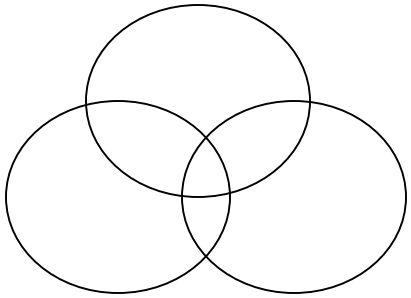
- *Higher order learning towards an ecological consciousness and competence involves three meta-movements, towards:*

  ‘respons-ibility’ *an expanded and ethical sense of concern/engagement;*

  ‘co-respondence’ *a closer knowledge match with the real world; and*

  ‘respons-ability’ *the ability to design and take integrative and wise action in context.*

Proposition xiii



- *A sufficient and whole learning response - at personal, organisational and social levels - requires shifts in the three interrelated areas of human knowing and experience:*

  perception (Seeing – affective dimension)

  conception (Knowing – cognitive dimension)

  action (Doing – intentional dimension)

Proposition xiv

The articulation of an ecological view of education and learning serves both to inform critical discourse and act a vision or attractor that can make its realisation more likely.

Shifts with regard to curriculum and pedagogy

FROM:

- Curriculum as top-down 'product'
- Fixed knowledge
- Disciplinarity
- Abstract knowledge
- Teaching/instruction
- Few learning styles
- Passive learning

TOWARDS:

- Curriculum as experience/situated learning
- Provisional knowledge
- Inter- and transdisciplinarity
- Real world knowledge
- Participative learning
- Multiple learning styles
- Reflective/active learning

Centre for Sustainable Futures

Towards sustainable institutions

FROM:

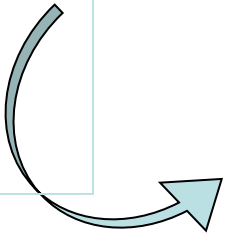
- Incoherence and fragmentation
- Large scale
- Loss of connectivity
- Closed community
- Teaching organisation

- *Microcosm of unsustainable society*

TOWARDS:

- Human scale
- High connectivity
- Open community
- Learning organisation
- Systemic coherence and synergy

Microcosm of sustainable society?



Centre for Sustainable Futures

Proposition xv

Whole system change depends on developing a sufficient critical, collective and connective intelligence - with regard to both systematic and systemic aspects of organisational change.

‘Leadership is shifting the collective attention at all levels’ – Scharmer, 2006

Organisational change

- *Systematic*

- policies, strategies, rules, procedures, assessment, evaluation, structures etc

- *Systemic*

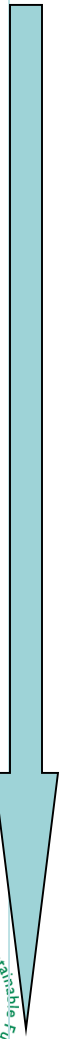
- emergence, collegiality, social learning, informal networks, collective intelligence and memory, shared ethos, self-organisation etc

Levels of learning and engagement

- Education *about* sustainability: content and/or skills emphasis. Fairly easily accommodated into existing system. Learning *about* change. Accommodative response

- Education *for* sustainability: additional values emphasis. Greening of institutions. Deeper questioning and reform of purpose, policy and practice. Learning *for* change. Reformative response

- Sustainable education: Capacity building and action emphasis. 'Living' curriculum. Sustainable institutions as permeable learning communities and organisations. Learning *as* change. Transformative response



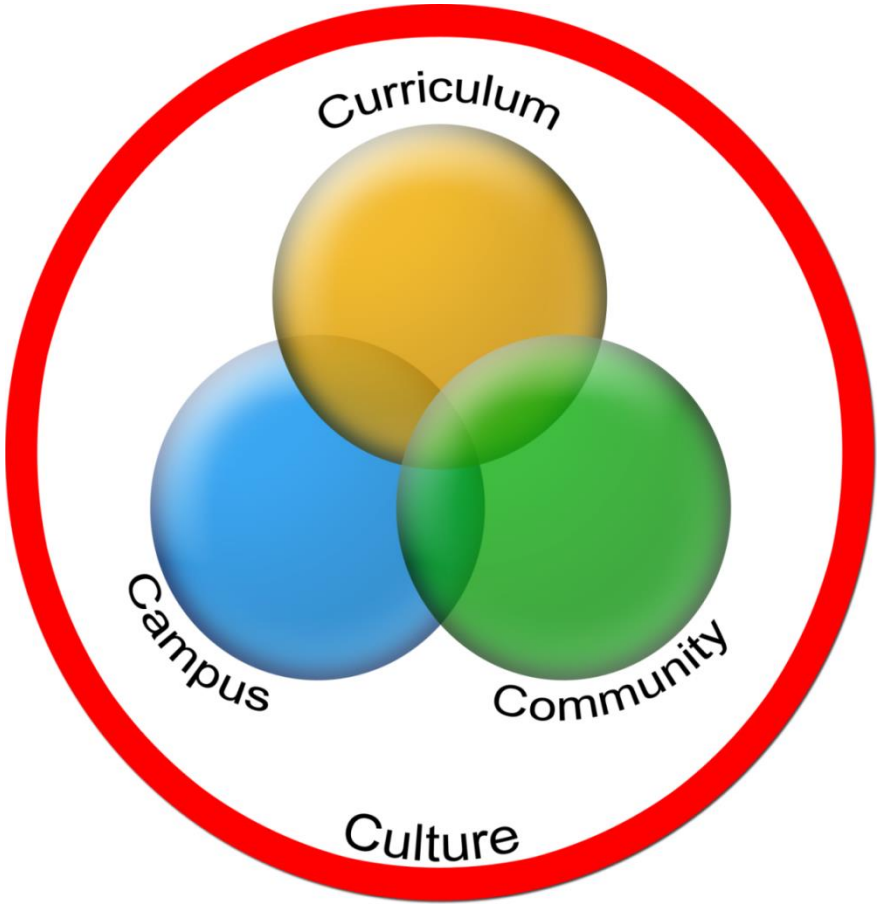
Sustainable education?

- **Sustaining** - people, communities, ecosystems
- **Tenable** - ethically defensible, working with integrity, fairness, respect, inclusiveness
- **Healthy** - systems and subsystems

Towards holistic change - the 4C model at UoP

Connection

Coherence



Communication

Consistency

Collaboration

Congruence

Process

Focus

Outcome

Five tasks of change agents in HE

- Finding ways of bringing the influence (of the values, ideas and modus operandi) of the dominant paradigm into the light of critical examination with respect to education and supporting unsustainability
- Articulating and clarifying the nature of the ecological/holistic paradigm as an attractor
- Developing ways to facilitate higher order learning amongst peers and students
- Articulating and 'writing in' the implications and benefits of an ecological education paradigm for educational purpose, policy, provision, and practice
- Supporting learning/change: ££, research, CPD, resources, policies, encouragement, communication, networking, brokering etc

‘Universities have pretty well isolated themselves from society, through their academic detachment, and that’s the way they’ve made themselves rather irrelevant to current issues of sustainability, which are absolutely critical.

.....university education has to go radically localised, in the sense of integrating student learning with the local community. Universities have to become dedicated in service to their community…..

.... that’s something that I see emerging quite strongly now as an element, and this is going to radicalise university education, and make it relevant.’

- Academic, University of Plymouth

Centre for Sustainable Futures
Kirkby Lodge
University of Plymouth
Drake Circus
Devon PL4 8AA
United Kingdom

01752 238890

csf@plymouth.ac.uk
ESD CETL
www.csf.plymouth.ac.uk