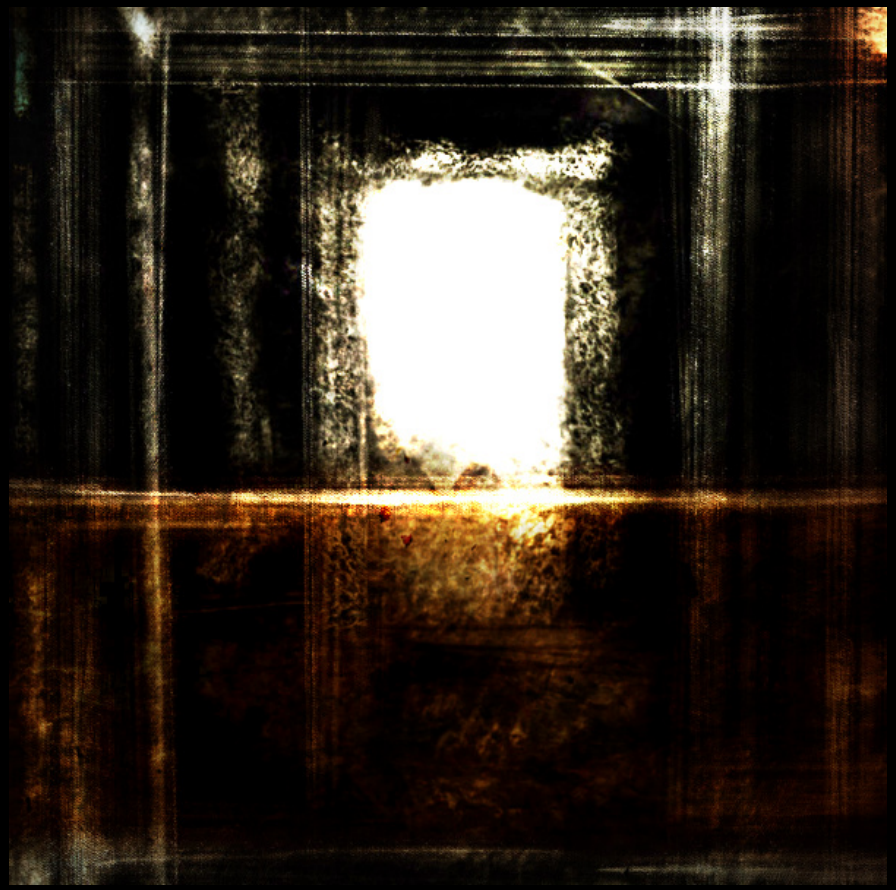
Venturing into strange places

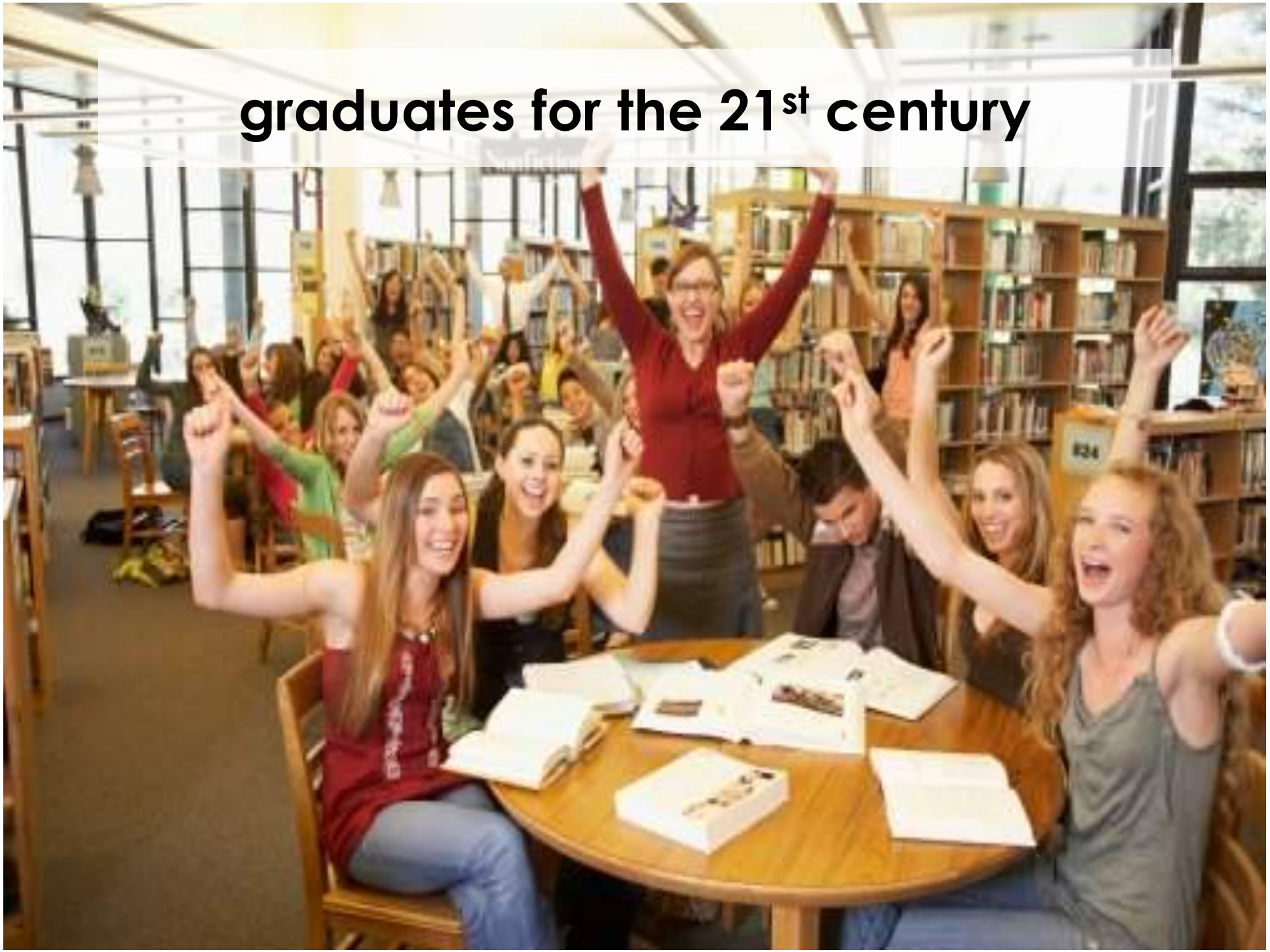
Preparing graduates for the 21st century



Ray Land, University of Strathclyde, Glasgow

ELEHE, HKU 3 December 2010

graduates for the 21st century



3 questions

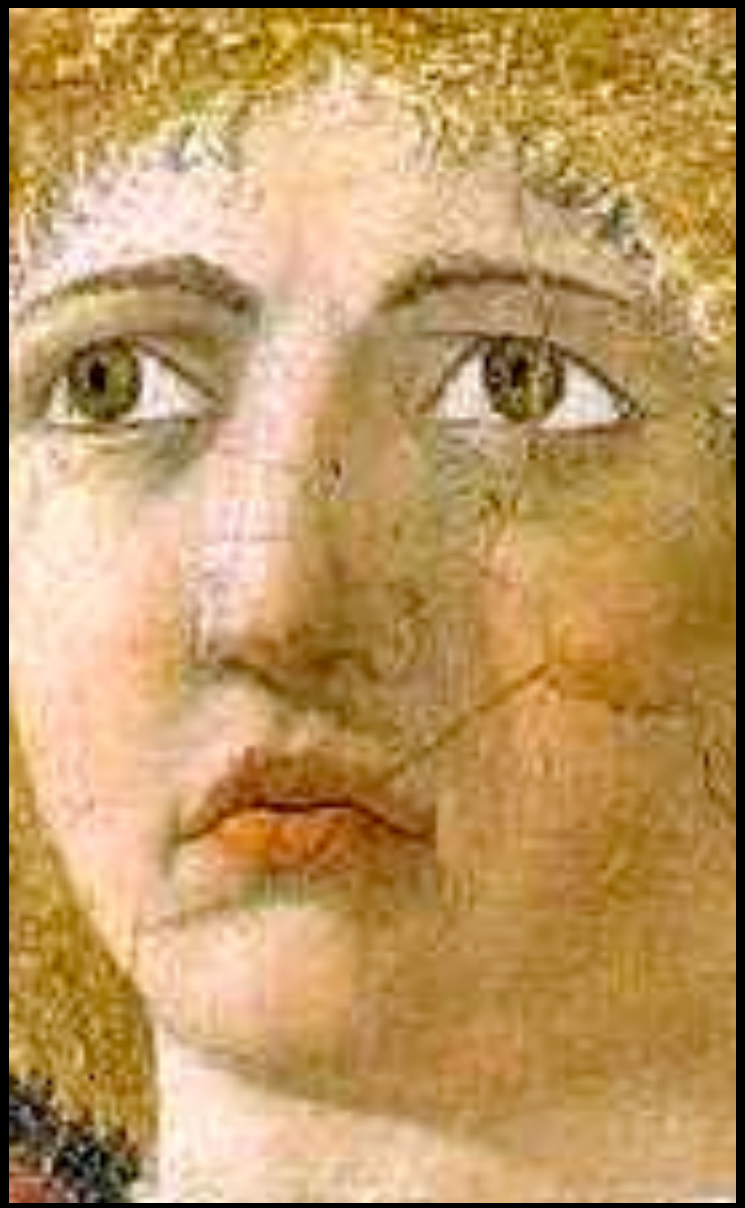
- What are likely to be defining characteristics of "21st century society" in the next two decades?
- What (higher order) attributes will our graduates need to thrive (or at least survive) in the 21st century world we have envisaged?
- What kind of learning environments or teaching approach are most appropriate to foster the kinds of graduate attributes we identify?

‘A radically unknowable world’

'our ignorance expands in all kinds of directions' (p.250) Need for creative 'knowing-in-situ' and imagination. Mode 3 knowledge where all our knowledge - of the world, of our situations, of ourselves - is contested.

Pedagogy must be founded on openness, mutual disclosure, personal risk and disturbance' (p.258).

(Barnett 2004: 247-260)

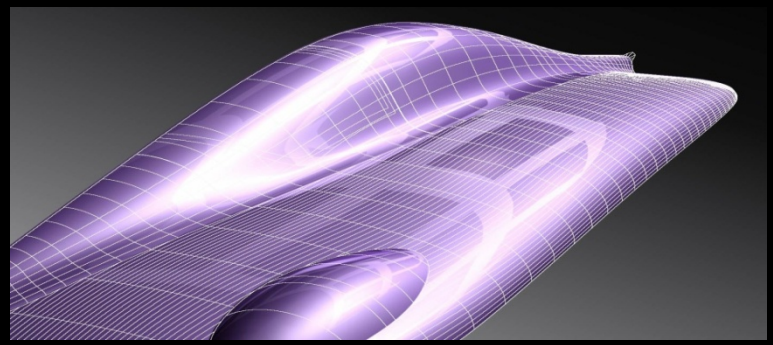


Question 1

- What would we envisage as likely to be defining characteristics of 21st century society in the next two decades?

Characteristics of the 21st century

- Uncertainty
- Speed and acceleration
- Complexity
- Multiculturalism
- Mobility of the population
- Conflict (social, military)
- Inter-generational tension
- Need for ethical citizenship
- Information saturation
- Proliferation of knowledge
- Globalisation
- Internationalisation
- Private /public sector tension
- Increasing panic



- Unpredictability
- Risk
- Need for flexibility and agility
- Entitlement v responsibility
- Scarcity of resources
- Austerity
- Sustainability
- Need for prudence
- Transparency & accountability
- Discontinuity and rupture
- Shifting paradigms
- Poverty v affluence
- Outsourcing of jobs
- Youthfulness

Supercomplexity

Unlike complexity, 'interactions between the elements are unclear, uncertain and unpredictable' (p.249) This is symptomatic of professional life with its competing demands, overload and stress. Challenges are never resolved because 'it produces a multiplication of incompatible differences of interpretation' (Barnett 2004 p.249)

Intellectual uncertainty

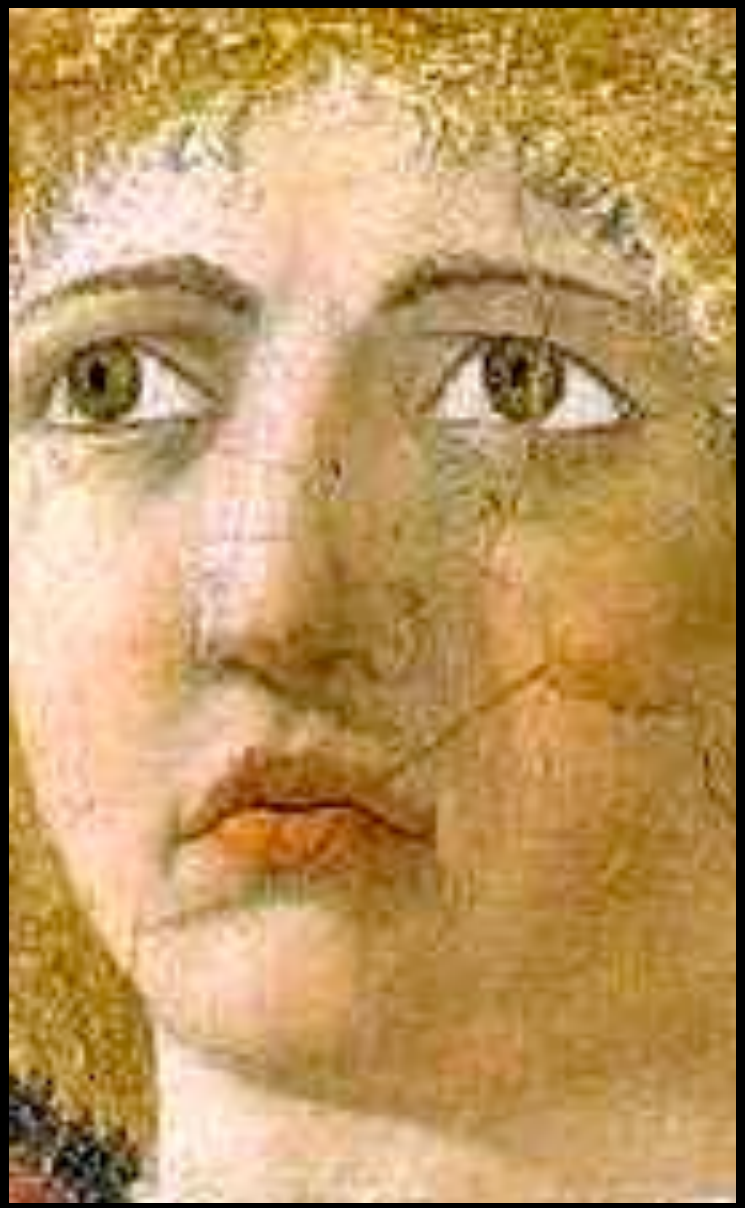
‘Intellectual uncertainty is not necessarily or simply a negative experience, a dead-end sense of not knowing, or of indeterminacy. It is just as well an experience of something open, generative, exhilarating, (the trembling of what remains undecidable). I wish to suggest that ‘intellectual uncertainty’ is ..a crucial dimension of any teaching worthy of the name.’

(Royle 2003 : 52)

Venturing into strange places

The student is perforce required to venture into new places, strange places, anxiety-provoking places . This is part of the point of higher education. If there was no anxiety, it is difficult to believe that we could be in the presence of a higher education.

(Barnett 2007: 147)



Pedagogies of uncertainty

it's ... insufficient to claim that a combination of theory, practice, and ethics defines a professional's work; it is also characterized by conditions of inherent and unavoidable uncertainty.

(Shulman 2005:1)

Uncertainty in the classroom

... learning to deal with uncertainty in the classroom models one of the most crucial aspects of professionalism, namely, the ability to make judgments under uncertainty.

Lee Shulman, *Signature pedagogies in the professions,* 2005 p.57

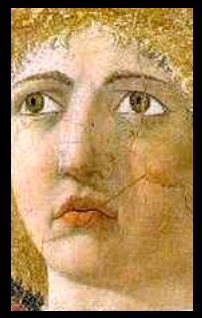
Atmospheres of risk

... uncertainty, visibility, and accountability inevitably raise the emotional stakes of the pedagogical encounters.

Uncertainty produces both excitement and anxiety. These pedagogies create atmospheres of risk taking and foreboding, as well as occasions for exhilaration and excitement.

Lee Shulman, *Signature pedagogies in the professions,* 2005 p.57

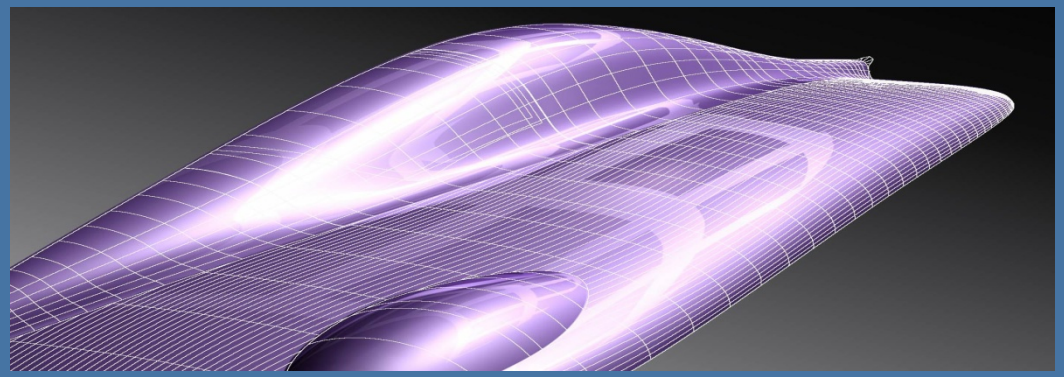
Pedagogies of uncertainty



I would say that without a certain amount of anxiety and risk, there's a limit to how much learning occurs. One must have something at stake. No emotional investment, no intellectual or formational yield.

(Shulman *Pedagogies of Uncertainty,* 2005:1)

Speed



Virilio 2000, Eriksen 2001

supercomplexity
death of geography
issues of democratic space
advent of universal real time
tyranny of the moment
slow and fast time
‘presentified’ history
single gaze of the cyclops

process	artefact
fragmentation	cohesion
exploration	exposition
visual	textual
volatility	stability
fast time	slow time
consensus	authority
openness	containment

What forms of ‘technoliteracy’ do we need to work in these spaces?

How can assessment regimes be re-crafted for these volatile spaces?

What digital pedagogies *work* in these environments?

How do these texts and technologies change the way academic knowledge is produced and distributed?

Plutarch's fire

'the mind is not a vessel to be filled, but a fire to be lit'.

(Plutarch c46 -127AD).

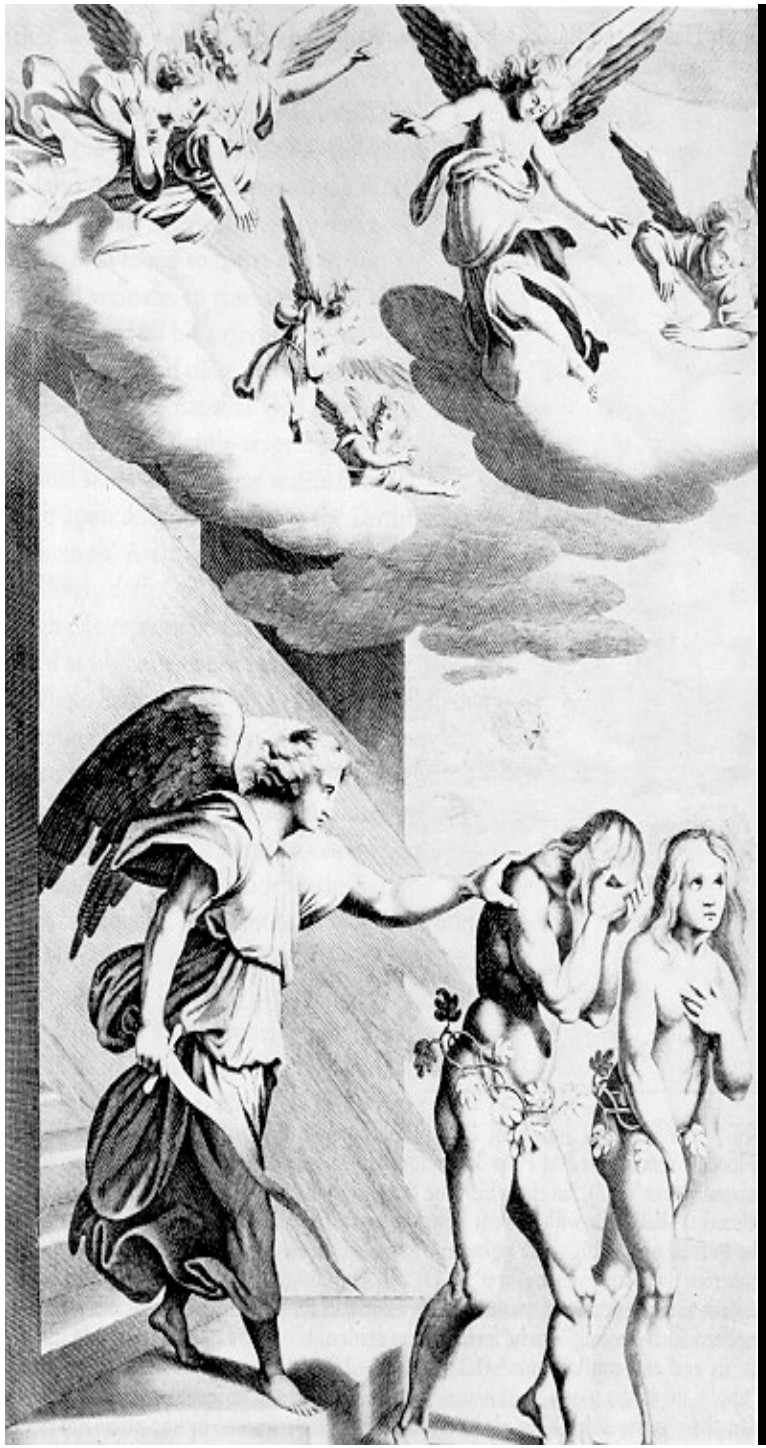
'Never has the educational philosophy behind this belief been more important: the changing world to be faced by today's students will demand unprecedented skills of intellectual flexibility, analysis and enquiry.

Teaching students to be enquiring or research-based in their approach is not just a throwback to quaint notions of enlightenment or liberal education but central to the hard-nosed skills required of the future graduate workforce.'

(Hammond 2007:1)

Troublesome knowledge

Perkins 1999



Characteristics of a threshold concept

- integrative
- transformative
- irreversible
- bounded
- re-constitutive
- discursive
- troublesome

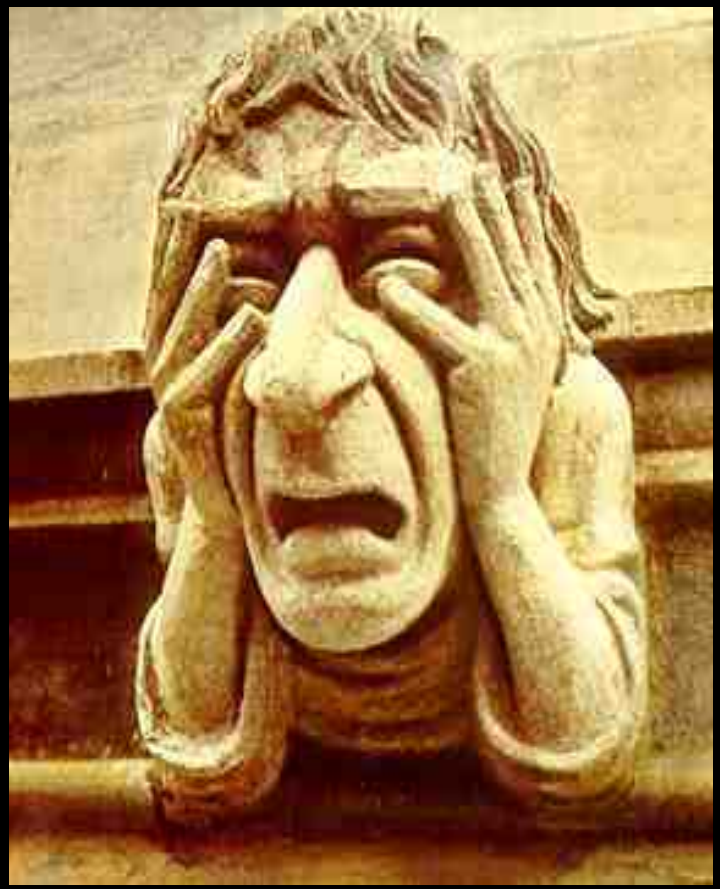
Meyer & Land 2003

Liminality

- a transformative state that engages existing certainties and renders them problematic, and fluid
- a suspended state in which understanding can approximate to a kind of mimicry or lack of authenticity
- liminality as unsettling – sense of loss


East of Eden
through the threshold

Troublesome knowledge



- ritual knowledge
- inert knowledge
- conceptually difficult knowledge
- the defended learner
- alien knowledge
- tacit knowledge
- loaded knowledge
- troublesome language

Question 2

- What are the higher order attributes that our graduates will need to thrive (or at least survive) in the 21st century world we have envisaged?

Higher order graduate attributes

- critical understanding
- disciplinary currency
- provisionality (knowledge, situations)
- contingency (knowledge, situations)
- problem formulation
- problem analysis and resolution
- evaluation
- evidence-based solutions
- argumentation
- deriving meaning from complexity
- modes of enquiry

- informed judgement
- advanced techniques
- independence
- learner responsibility
- creativity
- critical values
  - ethical
  - social
  - cultural
  - environmental
- wider professional conduct
  - contextual ‘savviness’
  - political astuteness

And at Master's level

- constructing conceptual frameworks
- critical evaluation of current research and advanced scholarship
- originality in the application of knowledge
- reconciling complex issues
- forming sound judgments
- coping with incomplete data

CIHE international / intercultural GAs

Knowledge

- world geography, conditions, issues and events
- complexity and interdependence of world events & issues
- understanding of historical forces that have shaped the current world system
- knowledge of a foreign language, intercultural communication concepts, international business etiquette

Attitudes

- openness to learning & positive orientation to new opportunities, ideas and ways of thinking.
- tolerance for ambiguity and unfamiliarity.
- sensitivity & respect for cultural differences.
- empathy or the ability to take multiple perspectives.
- self-awareness and self esteem about one's own identity & culture.

Skills

- research skills to learn about the world
- critical and comparative thinking skills
- ability to think creatively and integrate knowledge
- ability to use another language effectively and interact with people from other cultures
- coping and resiliency skills in unfamiliar and challenging situations

Question 3

- What kind of learning environments or teaching approaches might be most appropriate to foster the kinds of graduate attributes that have been identified?

Research could be a strong condition that is aimed at bringing about supercomplexity in the minds of students.

(Barnett 1992 p.623)

Linking research and teaching

"We are all researchers now … Teaching and research are becoming ever more intimately related … In a 'knowledge society' all students – certainly all graduates – have to be researchers. Not only are they engaged in the production of knowledge; they must also be educated to cope with the risks and uncertainties generated by the advance of science"

(Scott 2002, 13)

Supercomplexity (Barnett)

Uncertainty (Shulman),

Risk (Beck)

Speed (Virilio)

What is distinctive about 'higher' learning?

"It is furthermore a peculiarity of the universities that they treat higher learning always in terms of ***not yet completely solved problems, remaining at all times in a research mode …***

Schools, in contrast, treat only closed and settled bodies of knowledge. The relationship between teacher and learner is therefore completely different in higher learning from what it is in schools. .."

Wilhelm von Humboldt 1810

What is distinctive about 'higher' learning?

"…At the higher level, the teacher is not there for the sake of the student, both have their justification in the service of scholarship."

Wilhelm von Humboldt 1810

Idealistic (Humboldtian) approach. (Simons & Elen 2007)

- Research a kind of general education.
- Academic enquiry, morality (edification) and citizenship are linked.
- University different from schools (social needs) as well as from research institutions (govt needs, commercial interests)
- Education at the university solely guided by academic enquiry (one submits to the tribunal of reason, the spirit of truth, the force of the better argument.)
- Not influenced by pedagogic expertise or didactics, or managerial or moral or economic imperatives.
- State and society cannot ask for immediate returns.

successful graduate

responsible citizen

effective employee

potential research linkages

- Learning about the research of others
- Learning in research mode – enquiry based
- Learning to do research – research methods
- Pedagogic research – enquiring and reflecting about learning

Curriculum design and the research-teaching nexus

STUDENT-FOCUSED

STUDENTS AS PARTICIPANTS

EMPHASIS ON RESEARCH CONTENT

Research-tutored

Curriculum emphasises learning focused on students writing and discussing papers or essays

Research-based

Curriculum emphasises students undertaking inquiry-based learning or low key research

Research-led

Curriculum is structured around teaching subject content

Research-oriented

Curriculum emphasises teaching processes of knowledge construction in the subject

EMPHASIS ON RESEARCH PROCESSES AND PROBLEMS

TEACHER-FOCUSED

STUDENTS AS AUDIENCE

(Healey 2005)

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(Healey 2005)

LEAP

High Impact Activities

- First-Year Seminars and Experiences
- Common Intellectual Experiences
- Learning Communities
- Writing-Intensive Courses
- Collaborative Assignments and Projects
- "Science as Science Is Done"; Undergraduate Research
- Diversity/Global Learning
- Service Learning, Community-Based Learning
- Internships
- Capstone Courses and Projects

George Kuh (2008)

Association of American Colleges and Universities

Illustrations of practice

- Induction week Materials Science – ‘a product in ten years time’
- 2nd yr Literary Studies – ‘Toni Morrison’s *Jazz*’
- 1st yr Mech Eng – ‘dissection of a car’
- 1st yr Basic Psychology – ‘online peer groups’
- 2nd yr Chemistry ‘forensic investigation of a (fictitious) death’
- ‘Exhibitions’ as a research-teaching linkage in a School of Art

‘Beyond Understanding’

- ✦ **Possessive Knowledge**
- ✦ **Performative Knowledge**
- ✦ **Proactive Knowledge**

David Perkins – ‘Beyond Understanding’ in Land. Meyer & Smith Eds) (2008)
Threshold Concepts within the Disciplines

From demand culture to opportunity culture

- From very other-directed to significantly self-directed
- From extrinsic motivation to intrinsic motivation
- From cool to hot cognition
- From prototypical examples to include diverse and marginal examples and close counterexamples
- From 'learning about' to 'learning to do'

- **From learning the pieces to 'whole game learning'**
- **From 'designing to specifications' to 'designing the specifications'**
- **From problem solving to problem finding, problem defining**
- **From learning here and there to learning here, there and elsewhere**

David Perkins – 'Beyond Understanding' (2008) pp 14-15.

Academics for the 21st Century?

Thank you

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Project information at:

http://www.enhancementthemes.ac.uk/themes/ResearchTeaching/outcomes.asp