



The Roles Of Tertiary Education in a Future of Unprecedented Change

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I speak to you today from the position of:

- 34 years in tertiary education – 30 as a professor
- Emphasis on economics, marketing, business management and governance, and international business
- Several company directorships
- More recent work in future insight
- Strong commitment to the sustainability movement (SANZ/UNDESD,TNS.)

This audience will see readily that I have spent most of my career contributing to the sustainability problem through showing future managers how to grow their businesses and directing my own.

I am now trying to contribute to the solution.

I will argue that:

- Tertiary educators must reassess their priorities and approaches to teaching and learning on the basis of rigorous review of the drivers of global and local change
- This action is required because the magnitude and speed of these changes will be unprecedented, and the assumptions of 'business as usual' (BAU) are no longer tenable
- Education and learning experiences must focus much more on preparing people to anticipate and cope with major changes in their living and working environments with hope and satisfaction, and without succumbing to anxiety and fear.

Drivers of future change

It is important to distinguish between **direct** drivers of change and other changes that are **induced** by decisions to attempt to mitigate the direct effects.

Example: Climate change/extreme weather is a direct change driver that induced the Kyoto Protocol action to partially internalise to users the social costs of GHG emissions, which is itself a major driver of change.

Initiatives aimed at achieving sustainability induce deliberate changes.

When facing the prospect of potentially significant direct drivers of change that are uncertain in terms of timing and magnitude, the sensible human action is to anticipate and prepare through foresighting, assess the risks and opportunities, and then prepare and respond.

This enables people to address change with purpose and hope. With inadequate foresight and consideration they tend to regard themselves as pawns or even victims.

Direct drivers of change

There is general agreement in the foresight literature that the major global direct drivers of change to 2030 and beyond will include:

- Global warming/climate change/extreme weather
- Radical increases in hydrocarbon prices and intensification of production hegemony and conflicts as 'peak oil' is recognised
- Declining regional supplies of potable water and consequent health/mortality impacts and regional conflicts
- Atmospheric and water-borne toxins/declining food safety
- Pressure on global ecologies from population growth
- Geopolitical shifts and disruptions, particularly involving China, India, USA and Russia
- Wide swings in economic activity including financial failures and dislocations
- Advances in computers/IT/connectivity/robotics.

There will be complex interactions between the drivers of change.

Direct drivers of change (2)

Straightforward foresight and scenario analysis makes it easy for me to be convinced that most of these changes will be outside the range of prior human experience in terms of

- Magnitude
- Speed
- Simultaneity.

These changes will cause abrupt and radical shifts in human living and work, creating risks and opportunities.

Educators should not necessarily take my word for this proposition, but I do suggest very strongly that they evaluate it for themselves.

To do this foresight about the change drivers should begin at the global level, and are then 'drilled down' to understand national and regional implications. Change drivers that originate nationally are then included. Further implications for districts, sectors and enterprises can then be derived.

Direct drivers of change (3)

I predict that when educators have completed their evaluation they will conclude that students should be better prepared for their futures by bringing into mainstream curricula these new learning experiences:

- Skills in foresight analysis and interpretation, deep understanding of alternative futures, and anticipation of change
- Capabilities to think through and formulate responses to anticipated changes, often at short notice, and without useful historical experience to call upon
- Decision-making and implementation in stressful circumstances
- Mental and emotional resilience
- Ways of achieving interpersonal cooperation, a sense of community, and trust and respect.

These essential new core programmes will be meshed with vocational, professional and academic specialisations.

Further changes induced when people take pathways to strong sustainability

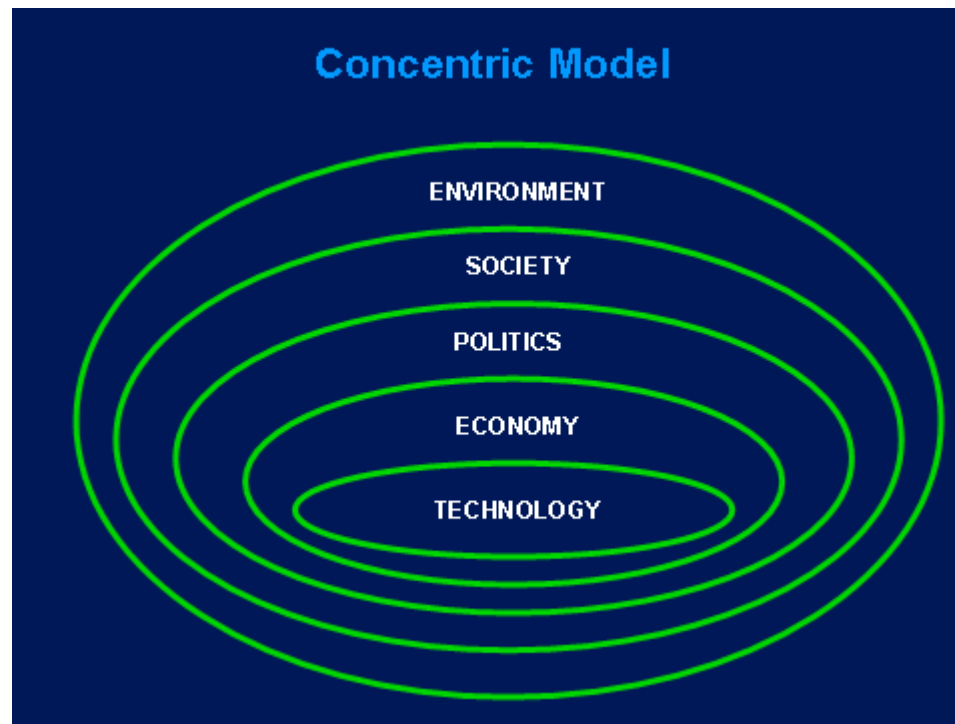
The obvious requirement for humankind to adopt pathways to strong sustainability introduces further roles for tertiary education.

I like this definition of strong sustainability:

‘A long term sustainable global society must have stable physical relationships with its surrounding ecosphere. The exchange of material and energy between society and ecosphere must be sustainable. The manipulation of nature by society must be subject to these limitations’.

The System Conditions proposed by TNS provide a practical set of criteria for strong sustainability. Herman Daly has provided a similar specification.

Education to build awareness of strong sustainability and the need for it – (1) Required model of the ecosphere





Education to build awareness of strong sustainability and the need for it – (2) Set of three curriculum developments

The proposed role of tertiary education is to guide students towards commitment to strong sustainability.

A set of three curriculum developments would be aimed at guiding the pathways towards this commitment:

- Building awareness of strong sustainability and the need for it
- Understanding approaches to achieving strong sustainability
- Adopting the ethical stance needed for commitment to act.

Education to build awareness of strong sustainability and the need for it - (3) The cathartic understanding

Consider the attention-gaining potential of this quote from James Hansen's 2008 paper in *Science* on global warming tipping points:

'If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and climate change suggest that carbon dioxide will need to be reduced from its current 385ppm to at most 350ppm.'

Commenting on the Hansen article in the LA Times McKibben wrote:

'People will doubtless survive a non-350 planet, but those who do will be so preoccupied, coping with the endless unintended consequences of an overheated planet, that civilization may not.'

Civilization is what grows up in the margins of leisure and security provided by a workable relationship with the natural world. That margin won't exist, at least for long, as long as we remain on the wrong side of 350. That's the limit we face.'

**Education to build awareness of sustainability and the need for it -
(4) Student projects that explore an overall 'Sustainability
Scorecard of Risk' such as:**

Indicator	Risk to ...(student's choice)
Climate change	?
Capacity of natural ecosystems to clean air and water	?
Supplies of clean water	?
Industrial toxins in air and water	?
etc	

Materials such as those available from TNS can assist such projects.

Education for understanding approaches to achieving strong sustainability

An essential aspect of this learning is that strong sustainability will result in **radical shifts** in lifestyles and workstyles away from BAU.

A **systemic** view is required.

It is important to distinguish between the required strongly sustainable **condition**, the **transitional initiatives** to get there, and the **tools** to be used in the transition.

In my opinion the model proposed by TNS is the most promising systemic approach, because it combines uncompromising science (the first three system conditions) with a useful model of levels of decision making and action.

This part of the curriculum should first teach the systemic principles then engage students in practical case studies and investigations.

Education for achieving commitment to strong sustainability

For most people, this commitment will occur only after they have undergone a substantial shift in their personal ethics and values.

Guiding and assisting students with this is probably the most challenging task for educators.

The current mainstream capitalist mixed economy model (BAU) is based on neoclassical economics, the legal systems required to support it, and the political structures needed to support both. This model has its basis in the Utilitarian ethic and the Social Contract theory of property rights that goes with it.

Happiness (utility) is held to be directly related to material income and wealth, and the aim is to maximise the sum of utilities of individuals. Individual self interest is assumed ('economic man').

Economic growth is seen as the only way to achieve more utility.

Nature is valued extrinsically – only in terms of what it can offer to generate utility for humans.

Education for achieving commitment to strong sustainability (2)

Many people appear to accept the Utilitarian ethical stance as simply the 'way things are'.

Depending on their political colour, they throw in various concerns about equity (fairness).

The daunting truth is that the Utilitarian ethical stance – which is currently accepted essentially without question in the capitalist mixed economy world - is **incompatible** with strong sustainability.

Education for achieving commitment to strong sustainability (3)

A very different ethical stance is needed by people committing to strong sustainability – ethics that:

- Place much greater importance on non-material sources of happiness
- Remove the perceived linkage between economic growth and success
- Affirm the deep interdependence of all people and mutual respect between all
- Values nature intrinsically through knowing that human society and its political economy is an integral and interdependent component of nature and the ecosphere of Earth, so that humans have reverence for nature and consider themselves responsible stewards of it.

A central role for tertiary education is to partner with other engaged parties to lead students to freely embrace these ethics.

Summary of roles for tertiary education

I have proposed mainstream curriculum developments in tertiary education that provide eight new learning experiences:

- Skills in foresight analysis, deep understanding of alternative futures, and anticipation of change
- Capabilities to think through and formulate responses to anticipated changes, often at short notice, and without useful historical experience to call upon
- Decision-making and implementation in stressful circumstances
- Mental and emotional resilience
- Ways of achieving interpersonal cooperation, a sense of community, and trust and respect
- Building awareness of the need for strong sustainability
- Understanding the systemic principles of strong sustainability and specific practical approaches
- Embracing freely the ethical shifts needed to commit to strong sustainability.

Conclusion: does tertiary education have the required capabilities?

The course content and teaching/learning techniques for these programmes are either available now or can be developed from current knowledge.

A more difficult matter is that the required cross-disciplinary systemic perspectives and futures orientations are currently unfashionable in tertiary education.

This is because tertiary education has taken paths of disciplinary specialisation and has adopted incentives for researching the past and present rather than applying scholarship to preparing for the future. Clearly, these policies are impediments that merit urgent attention.

Are tertiary educators prepared to adopt these new roles? I hope so, because the alternative is that tertiary education will become increasingly obsolete as the needs and priorities of society are reshaped by unprecedented change.