ALTERNATIVE EDUCATIONAL FUTURES: PEDAGOGIES FOR EMERGENT WORLDS

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PART ONE

MAPPING AND CHALLENGING FUTURES OF EDUCATION

2. MAPPING EDUCATIONAL FUTURES

Six foundational concepts and the six pillars approach

Written in a conversational essay style, this chapter maps educational futures through a new approach to the study of alternative futures. This approach is based on six foundational concepts (the used future, the disowned future, alternative futures, alignment, models of social change, and uses of the future) and six pillars (mapping, anticipating, timing, deepening, creating alternatives and transforming).

THE DISRUPTIVE CONTEXT

With peak oil near, has business–as–usual become business–was–usual (Sutton, pers. com., 2008, 28 August)? With climate change heating up the earth, even potentially leading to major cities throughout the world 'going under', how should we best prepare? With terrorism becoming a daily fact of life, has hope disappeared from our futures?

Or will new technologies—gene therapy, stem cell injections, artificial intelligence—save us, or is this just the search for the magic bullet, a false hope, focused only on the superficial, ignoring the deeper challenges the world faces?

How should schools, universities and the educational system deal with these foundational changes in climate and technology? Should the curriculum change? What are possible changing roles for teachers and students? What are the alternative futures of education? This chapter responds in a general way by situating these questions in the broader field of futures studies; more detailed responses are then provided in forthcoming chapters. Educational futures, I argue, is a subset of a broader transformation of society that can best be understood via the theoretical and methodological tools of futures studies.

In the move away from business–as–usual, moreover, it is not just climate and technology that is in transition, but the economy is also. A few centuries ago, England thrived because of its steel, coal mining and ship building industries. Today, Indian restaurants in England employ more people than those three industries combined (May & Jones, 2001).[i] Since the 1990s, it has been women–run small businesses that have been the dynamo of growth in the US:

Since 1997, women-owned firms have grown at nearly twice the rate of all firms (17% vs. 9%). Growth in employment by women-owned firms has been even more dramatic—24 per cent compared to 12 per cent for all firms. The number of women-owned firms with employees has expanded by an estimated 28 per cent during the past seven years—three times the rate of growth among all employer firms. (Centre for Women's Business Research, 2001; Karoly & Panis, 2004; http://www.bizjournals. com/bizwomen/facts/ impact.html).

South Korea has not only succeeded at manufacturing but is now taking a new path in the development of creative industries. It intends to have 10 per cent of its economy focused in the areas of gaming, movies, art and design, what analyst Douglas McGray (2002) and futurists James Dator and Yongseok Seo have called the Gross National Cool (Dator & Seo, 2004). Bhutan has even invented Gross National Happiness (Ura & Galay, 2004; see also www.grossinternational happiness.org/gnh.html).

And yet, even as the future disrupts, we remain tied to old patterns of behaviour. We know we are more productive when we work from home, yet the 9–5 still dominates. We know that creating community hubs, which combine work and home, will reduce traffic congestion and pollution, yet millions make the daily commute to the office. Schooling has barely changed in the last 150 years. Even as new technologies enter education, the mind-set often remains industrial—education for national development and for production.

We know we need to change but we seem unable to. The image of a new future, while emergent, is pulled down by the weight of the industrial era. What can we do? What should we do?

One approach to answering these questions comes from the emerging discipline of futures studies. Futures studies seeks to help individuals and organisations better understand the processes of change so that wiser, preferred futures can be created. This chapter seeks to frame discussions on the futures of education via foundational futures concepts and the six pillars of futures studies.

FOUNDATIONAL FUTURES CONCEPTS

There are six basic concepts of futures thinking: the used future; the disowned future; alternative futures; alignment; models of social change; and uses of the future (Figure 1).

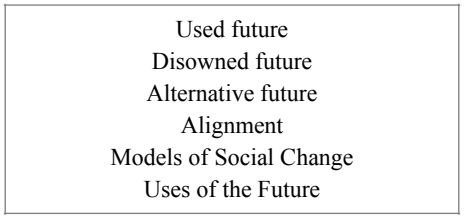

Figure 1. Foundational futures concepts

The first is the concept of the used future. The operating question is: have you purchased a used future? Is your image of the future, your desired future, yours, or is it unconsciously borrowed from someone else? When we look at Asian cities, we see that they tend to follow the same pattern of urban development that Western cities did generations ago (Inayatullah, 2004). And yet many, if not most, Western mayors now believe that they were mistaken. Instead of spending billions on unplanned growth, or development without vision, they should have focused on creating liveable communities. They should have kept green public spaces separating developed regions. They now understand that their image the future—of

unbridled growth without concern for nature or liveability—led to the gigantic megacities where many had jobs, yet suffered in almost every other way. Asian cities have unconsciously followed this pattern. They have forgotten their own traditions, where village life and community were central, where living with nature was important. Now they must find ways to create new futures, or continue to go along with the future being discarded elsewhere. This used future is leading to a global crisis of fresh water depletion, climate change, not to mention human dignity.

School systems—from design of playgrounds, to school rooms, to the relationship between the principal, teacher and student—remain locked into an image from the agricultural and industrial era. Surveillance, a clear hierarchy, seeing students as widgets and, most importantly, examination systems based on the 'mass' view of education dominate. The cost of this used future is the unique nature of the individual learner. Graduates, as well, when they enter the workforce, continue this future. It becomes the uncontested norm, even while failing to produce the desired results.

The second concept is the disowned future (see Stone & Stone, 1989; Inayatullah, 2007). Our excellence is our fatal flaw, said the Greek writer Homer. What we excel at becomes our downfall. And we do not see this because we are busy focusing on our strategic plans. It is the self disowned, the future pushed away, that comes back to haunt us. The busy executive, focused on achievements, only in later life remembers his children. It is later in life that he begins to think about work–life balance, about his inner life. The organisation focused on a strategic goal denies the exact resources it may need to truly succeed. In the story of the tortoise and the hare, we often focus on the hare—wanting to be the quickest and the smartest—but it is the tortoise, our reflective self, that may have the answer to the future. Plans go astray not because of a lack of effective strategy but because the act of creating a particular direction ignores other personal and organisational selves. The challenge is to integrate our disowned selves: for the school principal to remember what it was like to be a child, to use her child–self to create curriculum; for the army general to discover the part of him that can negotiate, that can learn from others. This means moving futures closer: from a goal oriented neo Darwinian approach to a softer and more paradoxical Taoist approach.

The third concept is alternative futures. We often believe that there is only one future. We cannot see the alternatives, and thus we make the same mistakes over and over. But by looking for alternatives, we may see something new. We are not tied into in the straitjacket of one future. As well, if our particular future does not occur, we do not die from emotional shock, rather, we learn how to adapt to changing conditions. Many in the former Eastern Europe remain in a state of future shock. They believed there was only one future—the socialist one. When that disappeared, they did not know what to do, where to look. Alternatives had not been mapped, the mind had become inflexible.

Alternative futures thinking reminds us that while we cannot always predict a particular future accurately, by focusing on a range of alternatives we can better prepare for uncertainty, indeed, to some extent *embrace* uncertainty. Career planning for schools often is based on training students for one job, instead of multiple jobs, or portfolio careers, or other variations of work. Related to the concept of alternative futures is the notion of alternative pasts. For pedagogy, this

would mean questioning history, asking what–if certain events did not happen—such as China's abandoning its naval strategy in the fifteenth century—how might history have unfolded differently. By opening up historical space, futures space is created. Alternative futures thinking in the class room would constantly challenge approaches that focused on education for the future. Such approaches tend to construct the future as almost predetermined, focussing on the future being global and technologically driven. Education for alternative futures intends to enable learners to see different futures—collapse futures, for example, or spiritual transformation. Or it might attempt to construct scenarios currently considered impossible: a world without war, for example.

The fourth concept is alignment. We need to align our day–to–day problem-based approach with strategy. And we need to align strategy with the broader big picture, and the bigger picture with our vision and the vision with our day–to–day. Often we envision a particular future, and yet how we measure this future and our organisational indicators, have no relationship to that vision. Thus the vision fails, because everyone knows the vision is there for show so as to appear modern. While enabling and ennobling us, the vision must link to the day–to–day realities; our day–to–day measures must reflect the vision. For educational institutions, this concept suggests that a vision for the future is crucial, and that the vision needs to be linked to strategy and indicators. As well, the vision should not become written in stone but remain flexible, adapting to changing conditions.

There is also inner alignment. Often an organisation or individual has a particular strategy of the future—to achieve a certain goal—but its inner map does not reflect that strategy. The inner map may even be in direct contradiction to this external reality. Thus there is a disconnect between what the leader may say or do, or wish others to do, and the inner map of the organisation. The challenge is first to discern the inner map—how the organisation sees itself. Is it youthful or mature? A tiger or an elephant? As well, how does the organisation imagine the future? Does your organisation believe the future is random; or that you are rushing down a rapid stream with rocks all around; or the future is like a game of snakes and ladders; or like a family? The inner map needs to reflect the outer map, and vice versa. In strategy sessions with schools, I have found that it is the inner story that often does not allow innovation. "It can't be done here", is a common response that ensures that innovation fails. Tired of pushing against bureaucracies or resistant parents, innovate teachers give up. The system then reinforces the fatigue. Another story of school for administrators is that of seeing their other school as Camelot surrounding by barbarians (the school boards, the media, parents, government ministers, and even students). This story is one of an impending deluge. The story also creates a cycle of distrust where the outside criticises the inside, and the inside attempts to protect its own. Innovation is stifled.

The fifth concept is your model of social change. Do you believe that the future is positive and you can do something about it? Or is the future bleak and there is nothing you can do about it? Or is the future created by the one-hundredth monkey? Or is the future already given, created by prophecy? Or perhaps you believe that the future is cyclical, everyone has a turn and the most effective strategy is to be patient. Or do you believe the future is not given, but created by our daily actions, and thus we must take the "bull by the horns"? Or … In an educational setting, the challenge is that the model of social change differs

dramatically amongst the stakeholders. The principal is likely to have a different model (more toward grabbing the bull by the horns) than parents, who see school in far more conservative and incremental terms. Teachers are likely to be caught in the middle.

The sixth concept is the use of the future. Futures thinking can simply be about foresight training, helping individuals and organisations with new competencies and new skills. At a deeper level, futures thinking can help create more effective strategy. By understanding the alternative, used and disowned futures, organisations can become far more innovative. At a deeper level, futures thinking can create capacity. It is not so much predicting correctly or getting the right strategy, that is, using the right tools, but about enhancing our confidence to create futures that we desire. Futures methods thus decolonise the world we think we may want—they challenge our basic concepts. They deconstruct. Enhancing capacity empowers individuals; this liberates and is scary for many as the safety of having others make decisions for one is taken away.

Figure 2. Uses of the future

For schools, futures projects generally tend to be focused on tools and methods. Principals and teachers are already overwhelmed by the demands of the state, school boards, parents and the changing world (web technologies, research in genetics, changes in health paradigms, issues around safety and risk); opening up the future creates even more chaos. To work beyond such demands and pressures invites educators to go to the deeper levels of emergence. Futures thinking helps create the conditions for a paradigm shift. The organisation imagines a new future, creates a new strategy, enables stakeholders, uses tools and then a new future emerges. Even deeper levels are about meme (Dawkins, 1989; Blackmore, 1998, p. 2; www.scholars.nus.edu.sg/cpace/infotech/cook/memedef.html)[ii] and microvita change (Sarkar, 1991). Meme change is about changing the ideas that govern institutions (life long learning, for example) and microvita is about the non-local field of awareness that makes sense of reality (inner change instead of just strategy). Futures thinking ultimately can go far as mapping and changing memes and fields of reality.

There is a seventh concept, but that is the no-concept: that all listing of concepts becomes yet another cookbook that limits creativity, instead of allowing innovation. Being present to changing sensitive conditions, allowing futures to emerge, is central here.

THE SIX PILLARS OF FUTURES STUDIES

These six pillars of futures studies (Figure 3) provide a theory of futures thinking that is linked to methods and tools, and developed through praxis. They can be used as theory or in a futures workshop setting. The pillars are: mapping, anticipation, timing, deepening, creating alternatives and transforming.

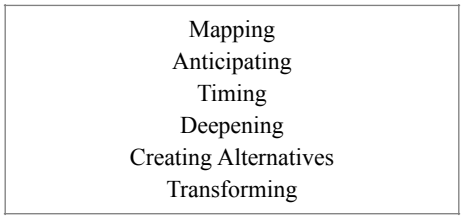

Figure 3. Six pillars of futures studies: MATDCT

Mapping

In the first pillar, past, present and future are mapped. By mapping time, we become clearer on where we have come from and where we are going. Three tools are crucial.

The method, shared history, is the first tool and consists of having participants—in a futures workshop—write down the main trends and events that have led up to the present. A historical time line is then constructed to the present. Shared history asks: What are the continuities in our history, what is discontinuous? Has change been stable or have there been jumps in time? This opening tool creates a framework from which to move to the future.

The second tool is the futures triangle. This maps today's views of the future through three dimensions: the image of the future, the push of the present and the weight of history. This is represented pictorially as Figure 4.

The image of the future pulls us forward. While there are many images of the future, five or so are archetypal. These are:

- Evolution and progress—more technology, man as the centre of the world, and a belief in rationality. In education, this is the modernist industrial vision of education. Schools should teach basic skills (reading, writing, mathematics) and prepare students for becoming consumers, workers and citizens of the nation–state (and the best as producers and leaders).
- Collapse—a belief that humanity has reached its limits, indeed we have overshot them. This is evident in world inequity, fundamentalism, tribalism, nuclear holocaust, climate disasters, which all point to a worsening of the future. In educational settings, there is a general sense that education is failing, that schools and universities are unable to meet the changing needs of the world. They are unable to adapt to new technologies; they are unable to manage the loss of state subsidies (for universities) because of globalisation; and they are unable to create new minds focused on world citizenship.

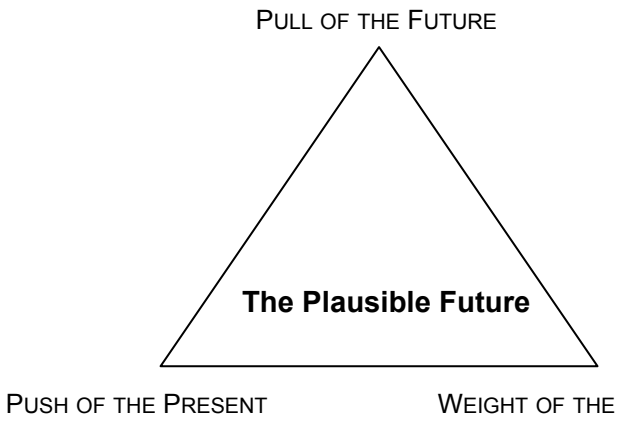

Figure 4. The futures triangle

– Gaia—the world is a garden, cultures are its flowers, we need social technologies to repair the damage we have caused to ourselves, to nature and to others; becoming more and more inclusive is what is important. Partnership between women and men, humans and nature, and humans and technology is needed. This is challenging the very notion of 'man'. This is the sustainability image in education—schools and universities moving from silos of learning to an ecology of mind, to an ecology of selves and pedagogy. The purpose of education in this image changes dramatically, becoming far more idealistic and future focused. The image is of the garden school or university where all learn from each other, and create value by finding their unique skills.

- Globalism—we need to focus on ways to come closer as economies and as cultures. Borders need to break down; technology and the free flow of capital can bring riches to all. Traditional 'isms' and dogmas are the barriers stopping us from achieving a new world. This image has been the one educational systems have started to focus on—preparing students for a global–tech world, adapting to new technologies and to becoming global corporate and non-governmental organisation players.
- Back to the future—we are past our prime; we need to return to simpler times, when hierarchy was clearer, when technology was less disruptive, when the Empire was clear. Change is too overwhelming; we have lost our way, and must return. In this future, education is about the return to foundational texts—Greek, Indian, Sinic or Islamic, for example. Each culture requires a return to the basics, whatever these basics are. Generally, however, the basics focus on morality, clear roles around gender, strong leadership (often male) and communitarian values—identity is collective and generally singular, be it religious, national or ethnic based.

An additional image that faces education today is the breakdown of the public—whether from globalisation, new technologies, gender politics, multiculturalism, terrorism, the notion of a public with a shared ethos; that is, mass culture, has broken down. This is leading to a multiplicity of learning spaces, from home schooling, to alternative schools, to new universities, to corporate education, to … The public has become contested and new possibilities for public verses private are still emerging. This is the postmodern educational system—perhaps the *à la carte* model of schooling and university.

Along with images are the pushes of the future. These are quantitative drivers and trends that are changing the future. An aging population is one such trend. We are living longer and having fewer children. Which future will this trend push us towards? Along with living longer, increased military spending and export—especially by the five permanent members of the UN Security Council—is making the world a more dangerous place, as are the activities of terrorists.

There are also weights. These are the barriers to the change we wish to see. Each image has differing weights. Those who imagine a globalised world are weighed down by nationalists and the brutal fact that while capital may be freer, labour is still tied to place. The Gaian image is weighed down by the dominance of hierarchy—male, empire or expertise. "The boss (the teacher, the principal, the government minister) is always right" is the guiding myth.

By analysing the interaction of these three forces, the futures triangle helps us develop a plausible future.

The third tool is the futures landscape. This tool helps us audit where our organisation is. The landscape has four levels which can be presented visually as shown in Figure 5 below. First is the jungle, a dog–eat–dog competitive world, wherein the goal is to survive. Second is the chess set, where strategy helps us enhance our effectiveness—we succeed by being clear about our goals and creating more responsive organisations. Third are the mountain tops—these are the big pictures, the broader social contest we find our organisations in. Finally is the star, the vision. Is your school or university engaged only in day–to–day survival, or is it using strategy to move forward? Has it developed scenarios of alternative

futures, different assumptions of how the world might be? Does it have a vision of the desired future? If so, does it link the vision to strategy?

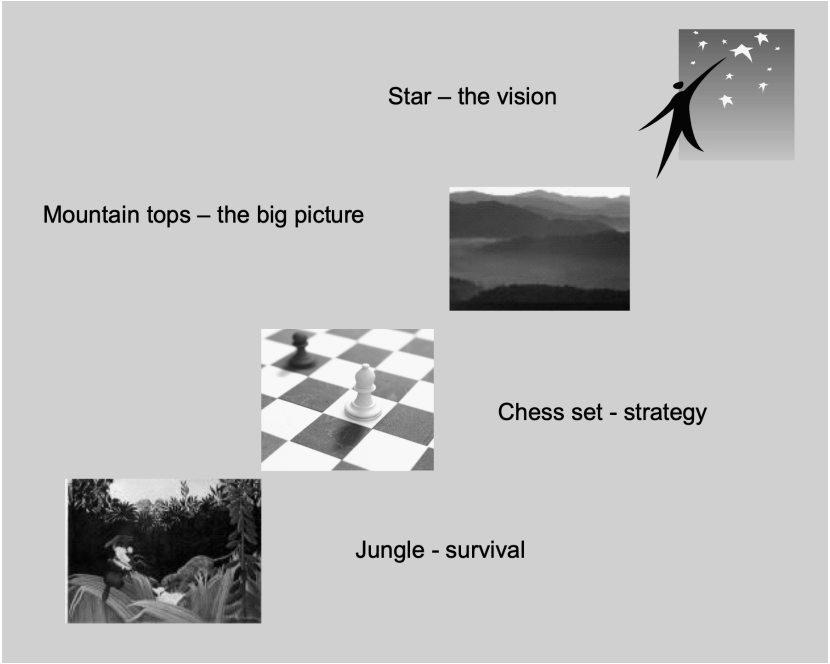

Figure 5. The futures landscape

This leads us to the second pillar of futures studies.

Anticipation

The second pillar of futures thinking is Anticipation. There are two main methods here. Emerging issues analysis (Molitor, 2003) seeks to identify bell-weather regions, where new social innovation starts (Figure 6). It also seeks to identify issues before they become unwieldy and expensive, while searching for new possibilities and opportunities. Emerging issues include disrupters such as: will robots have legal rights soon? Will meditation be part of every school curriculum? Will peer to peer mediation become a core skill for every school in the world? Will meat be banned from schools (as soft drinks have been in some American counties) (CBS Worldwide Inc., 2002, par. 1)? Will schools and universities redesign curriculum and their buildings to reflect the challenges of climate change? Will brain science advances lead to far more targeted learning in schools? Will we develop pharmacies in our bodies? Will the smart toilet help us with early diagnostics?

While solving emerging issues leads to little political pay off—that is, voters will not reward the leader for solving tomorrow's problems—it can help minimise

harm and indeed help organisations respond far more swiftly to emerging challenges. While too expensive for a particular school to engage in, ministries of education can use this method to develop new opportunities and avoid future problems, as can consortiums of universities.

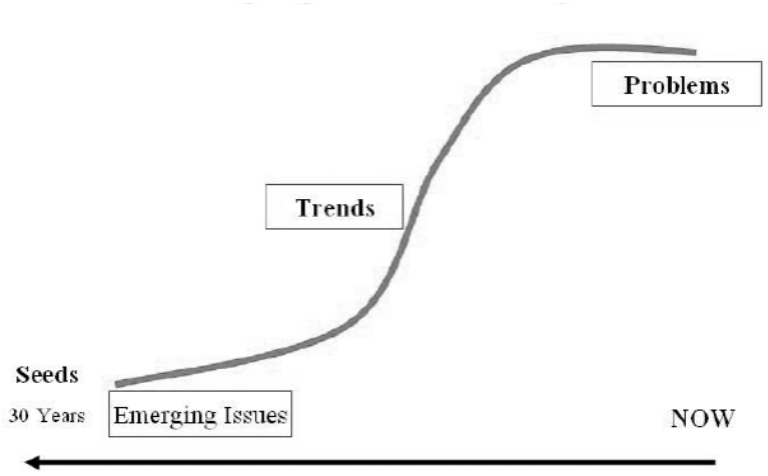

Figure 6. Emerging issues analysis

Along with emerging issues analysis is the futures wheel. The futures wheel seeks to develop the consequences of today's issue on the longer term future. We can ask how a particular new technology might influence us 20 years from now. The futures wheel does not stop at first order impacts, but rolls along to second order impacts, and beyond. It intends to explore and deduce unintended consequences. For example, using the future wheel we can map logical implications of having daily meditation sessions for school children in the public system. This would likely lead to enhanced IQ and EQ over time, as well as better grades. Sick days would be reduced and, in time, the wellness paradigm would become dominant. In another trajectory, some parents might object, leading to political and social tensions. This could however be resolved by children who have experienced the benefits. Or it could lead to parents taking their children away, seeing meditation as too radical an intervention.

The futures wheel helps anticipate future issues, create the possibility of new products and move from seeing the world at a simple unconnected level to a complex connected level (as illustrated in Figure 7). How the parts interact with the whole becomes clearer …

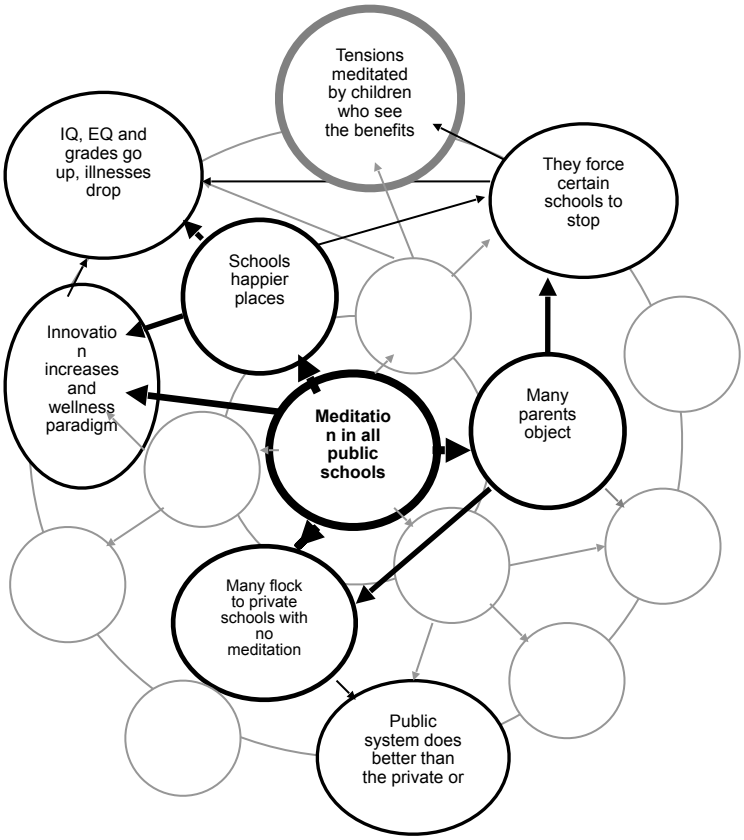
Tensions meditated by children who see the benefits
IQ, EQ and grades go up, illnesses drop
They force certain schools to stop
Schools happier places
Innovation increases and wellness paradigm
Meditation in all public schools
Many parents object
Many flock to private schools with no meditation
Public system does better than the private or

Figure 7. The futures wheel

Timing the Future

The third pillar is timing the future. This is the search for the grand patterns of history and the identification of each one of our models of change. Do we believe that it is the creative minority that generates the new system? Or do we believe that you can't fight the school system hall, that is, deep change is impossible. Humans are essentially past-based, every parent believing they are the world's expert when it comes to education. We can only resign ourselves to the fate of history. Or do we believe that change comes from inner reflection and spiritual practice? Or that changing the outside world is next to impossible—*plus ça change, plus c'est la même chose*? Or that by changing our consciousness we can change the world? Or is institutional change the key—if we can change laws and social structures then we can affect real change? It is not just enough to, for example, go to a higher level of consciousness to stop war or smoking; rather, peace forces are needed for stopping war. To reduce tobacco consumption, financial disincentives are required

as well as social support networks to help individuals make the transition. Or is it really technology that counts most of all—we create technology and then it creates… ? We create the Internet and now we define how we work—flexible but 24/7; how we play—gaming; and even how we meet partners. Technology creates new economies and tension results when society lags behind, when power relations do not change.

How do you time the future? We can also ask, what is your metaphor of the future? Do you believe the future is just luck or good *karma*? Or is the future a planned rational activity created by choice and risk analysis? Or is the future totally open, anything is possible; the world is a magical place? Or is there is 'syncrodestiny', as Deepak Chopra writes (2005)? Or is the future like a game of snakes and ladders—there is hard work but the world is a scary place and at any second, all the gains can disappear? Or is the future like a machine, regular, predictable, clockwork—there are patterns which once seen can help identify what will happen?

Macrohistorians or grand thinkers have been wrestling with these questions for thousands of years (Galtung & Inayatullah, 1997; Voros, 2006; Special issue, *Journal of Futures Studies*, 2004). From their thinking, a few foundational ideas result:

- The future is linear, stage–like, with progress ahead. By hard work, we will realise the good future.
- The future is cyclical, there are ups and downs. Those at the top will one day find themselves at the bottom. Because they are on the top, they are unable to adapt and adjust as the world changes. Their success was based on mastery of yesterday's conditions. Few are able to reinvent their basic values.
- The future is a spiral—parts are linear and progress-based, and parts are cyclical. With leadership that is courageous and has foresight a positive spiral can be created. The dogmas of the past are challenged but the past is not disowned, rather it is integrated in a march toward a better future.
- New futures are more often than not driven by a creative minority. They challenge the notion of a used future. Instead of imitating what everyone else is doing, they innovate. This can be social, political, cultural, spiritual or technological innovation. These change agents imagine a different future, and inspire others to work toward it. When there is no creative minority, instead of sustainable systems what results are bigger and bigger empires and world–states. Power and bureaucracy continue unchallenged, charisma becomes routinised and the hunger for something different, that can better meet human needs, drifts away. Size or growth takes over, inner and outer development disappear.
- There are hinge periods in human history, when the actions of a few can make a dramatic difference. It is in these periods, especially, that old ways of behaviour are no longer helpful: what succeeded before no longer works now. We are likely in this phase at present.

The social Darwinian notion of competition now endangers us all—but Darwin also wrote about love (Loye, 2000, 2004). For Darwin, this human sensitivity is far more important than the survival of the fittest. Evolution is perhaps moving from randomness to conscious, visioned direction. Such a change is because we are now

no longer able to keep on pushing crises back, focusing only on the litany, the superficial, instead of resolving the deeper issues. Our current worldview is not up to the challenge. Man over nature may have brought technological progress but it now threatens to extinguish us all. The creation of the nation–state was a wonderful solution to the problem of empire *versus* localism, of the knight *versus* the priest, however, nationalism threatens us all, and thus new governance systems are needed. Masculinist reductionist science has truly been a miracle but now a move toward holism is required. For schools, this means moving to an ecology of learning, what in other chapters has been called the neohumanist model of education.

What worked in previous eras—the agricultural and the industrial—is unlikely to help us in a global postindustrial era. Indeed, in this view of history, the image leads reality—the image is of a transcendental jump, but the reality is lost in industrial modernist masculinist reductionism.[iii]

Conscious evolution is the key in this approach (Sahtouris, 2002). The world is a complex adaptive system—once we map the future, it changes. Thus, while we need a vision, we do not need a blueprint. Education is therefore about developing the capacity to adapt to novelty and to create novelties. This is a crucial change in purpose, as education generally has been focused on social control or creating consumers (and some producers) for the market.

Deepening the Future

Pillar four is deepening the future and uses Causal layered analysis (Inayatullah, 2004) to unpack the future. Causal layered analysis (CLA) assumes four levels of analysis.

The first level is the 'litany'—quantitative trends, problems, often exaggerated, often used for political purposes—(e.g., safety in schools) usually presented by the news media. Events, issues and trends are not connected and appear discontinuous. The result is often either a feeling of helplessness (What can I do? It is too overwhelming. My child is in danger.) or apathy (Nothing can be done, as demographic patterns cannot be easily changed.) or projected action (Why don't they do something about it? It is government's responsibility. What are they the educators doing?). This is the conventional level of most futures research that can readily create a politics of fear.[iv] The litany level is the most visible and obvious, requiring few analytic capabilities.[v] Assumptions are rarely questioned.

The second level is concerned with social causes, including economic, cultural, political and historical factors (weak laws, breakdown of community, economic rationalism). This type of analysis is usually articulated by policy institutes and published as editorial pieces in newspapers or in not–quite academic journals. This level excels at technical explanations as well as academic analysis. The role of the state and other actors and interests is often explored at this level. The data is often questioned, however the language of questioning does not contest the paradigm in which the issue is framed but rather, remains obedient to it. In the safety issue, causes may cluster around the following: overpopulation particularly via new migrants entering the school system; poor building design, and lack of funding for schools; congestion caused by cars; violence shown on television and in movies and video games.

The third deeper level is concerned with structure and the discourse/worldview that supports and legitimates it. The task is to find deeper social, linguistic, cultural structures that are actor–invariant (not dependent on who the actors are). Discerning deeper assumptions behind the issue is crucial, as are efforts to revision the problem. At this stage, one can explore how different discourses (the traditional, modernist, feminism, technological, for example) do more than cause or mediate the issue, but constitute it. A traditional response may be to look for who are the strangers—stranger danger. A modernist solution to safety may be to install guards, while a feminist may teach children mediation skills (in case the violence is coming from within the school). A technological response may be to install surveillance cameras throughout the school and surrounding areas. Or it may be to give each child a mobile phone, so they can call in case of danger.

The fourth layer of analysis is at the level of metaphor or myth. These are the deep stories, the collective archetypes—the unconscious and often emotive dimensions of the problem or the paradox (e.g., students as tabula rasa, *vs.* students as plants to nurture, *vs.* students and teachers as different species in an ecology of learning, *vs.* elders know best). This level provides a gut/emotional level experience to the worldview under inquiry. The language used is less specific, more concerned with evoking visual images, with touching the heart instead of reading the head. This is the root level of questioning. Questioning itself, however, finds its limits since the frame of questioning must enter other frameworks of understanding—the mythical, for example. In the safety issue, one dominant metaphor is that of stranger danger. For the feminist it is about ‘dialogue’. Use of new technologies is framed by “better safe than sorry”, while for critics of surveillance it is “1984”.

In one workshop for an educational ministry in Australia (Inayatullah, 2005), CLA was applied to concerns including safety in schools, behaviour management in schools, industrial relations, and public school enrolments. Solutions to school safety ranged from more surveillance to creating strong local communities. Behaviour management issues had varied solutions depending on participant’s perspectives. A traditionalist on stronger values, a modernist on behaviour modification and other interventionist programs, and a postmodernist perspective called for new technologies and an understanding of power relations between schools and their communities, teachers, students and families.

Depending on one's worldview or myth, the solutions offered differed. If the myth was that teachers were lazy, then more flexible industrial relations policy to increase efficiencies were suggested. If the myth was that teachers are worked too hard, then unions were the solution so as to ensure a ‘fair go’.

Marcus Bussey in his chapter in the *Causal Layered Analysis Reader* provides the following analysis of the litany issue he terms “fear and intensification” (see Table 1):

> Futurists seeking to engage with the educational possibilities facing schools today can begin by first examining the dominant image of schools as depicted within media and political debate. Such an examination would produce an analysis like CLA: Fear and Intensification. As can be seen, while antagonistic to the more hopeful aspirations of parents, children and educators, yet its hold on populist educational debate today is formidable. (Bussey, 2004, p. 332)

Table 1. CLA of 'fear and intensity'

CLA: Fear and Intensification	The Dominant Model
Litany	Schooling is out of control; blame children, parents, teachers, politicians
Systemic	Increase levels of surveillance, more testing, computers
Worldview	Effective managerial controls will enable schools to function at optimum, all problems can be solved
Myth/metaphor	Schools are knowledge factories

CLA also can be employed to better understand different futures and different images of the future. Bussey offers this analysis of the new spirituality (and see Table 2):

> Layered vision of knowledge promoted in spiritually values-oriented learning communities. A deep view of mind as 'body–mind–spirit' is promoted and facilitated. The emphasis shifts from content to process. Valid knowledge is seen in terms of its spiritual/individual, social and cultural worth with meditation as part of the research process. Character becomes central to school curriculum.
>
> Small groups and team learning that follows action learning principles become the mainstay of education—shifting emphasis from individual as solitary to individual as connected member of a learning community.
>
> Knowledge as personal and social quest that ultimately leads to greater welfare of all and augmentation of one's sense of spiritual self. Thus, learning becomes more visceral and at the same time more subtle—a process of self making. Defining metaphor is taken from the Wisdom tradition and is the wise–one as Homo tantricus. (Bussey, 2004, p. 336)

Table 2. CLA of 'new spirituality'

CLA: Wisdom Culture	
Litany	Life is full of lessons, information helps but so does moral courage, ignorance is the enemy, purposeful effort leads to wisdom, information and knowledge are not the same thing

Systemic	Decentralised and community–based learning, relational with mentoring, teaching and learning are social responsibilities, we need different teachers for body–mind–spirit continuum
Worldview	Life a journey to the Centre, knowing is layered
Myth/metaphor	*Homo tantricus*

Education can also be a litany solution to many of today's problems, as demonstrated in the following unpacking of health mistakes.

If we examine health care (Table 3) we know that there is a high rate of medical mistakes leading to serious injury or death. At level one, litany, the solution is more education and training (focused on anatomy, for example) for health practitioners, particular doctors. At level two, system, we search for causes for these mistakes. Is it lack of communication between health professionals? The state of the hospital? Lack of understanding of new technologies? Mis-administration of medicine? Systemic solutions seek to intervene by making the system more efficient, smarter, ensuring that all parts of the system are seamlessly connected. The goal is not the education of a particular stakeholder but to make the entire system smarter.

But if we move to a deeper, worldview level, we see the problem may in fact be the paradigm of Western medicine itself: its reductionism, its focus on technique and the disowning of its softer and holistic potentials. The doctor remains far above, the nurse below and the patient even lower. It is the hierarchy of knowledge that is the root problem at this level. Merely more training or more efficient systems ignore the question of power. The solution is to empower patients, or a move to different health systems—complimentary health systems, for example. Certainly, alternative health is the disowned self of modern medicine (though now many researchers are integrating these opposites—using modern and ancient medicine to develop better outcomes). At this worldview level, the goal is to create learning and healing organisations—wherein the entire system is reflective of its purposes and errors. The system thus becomes more complex and co-adaptive.

At the myth level, the deeper problem is the notion of "doctor knows best". Patients give up their power when they see medical experts—patients enter the hospital system and immediately regress to their child selves. Doctors resort to expert selves—and with dehumanised bureaucracies ensuring a focus on efficiency, mistakes keep on happening. Education at this level is about empowerment.

CLA seeks to integrate these four levels of understanding. Each level is true, and solutions need to be found at each level. Thus policy solutions can be deeper. Litany interventions lead to short term solutions, easy to grasp, packed with data. Systemic answers require interventions by efficiency experts. Governmental policies linked to partnership with the private sector often result. Worldview change is much harder and longer term. It requires seeking solutions from outside the framework in which the solution has been defined. And myth solutions require the deepest interventions, as this requires telling a new story, rewiring the brain and building new memories and the personal and collective body. The entire exercise is intended to work with all parts of the system to develop preferred futures—to move the individuals and systems toward ideal states.

Table 3. CLA of 'medical mistakes'

Causal Layered Analysis Level	Medical Mistakes
Litany	High rate of medical mistakes Solution: More GP Training
Systemic causes	Audit on causes of mistakes: communication, new technologies, administration Solution: more efficient smarter systems
Worldview	Reductionist modern medical paradigm creates hierarchy Solution: enhance power of patients Solution: move to different health systems
Myth/metaphor	"Doctor knows best" Solution: "Take charge of your health"

After the future is deepened, we can then broaden it, using the fifth pillar.

Creating Alternatives

The fifth pillar is creating alternative futures. There are two important methods in this pillar. The first is nuts and bolts.[vi] This consists of undertaking a structural functional analysis of the organisation and then finding different ways of doing what it does. If it is an educational organisation, one may challenge current models: administrators (what are some other ways to manage information and competencies, can AI replace humans, for example?); teachers (who should teach, should jobs be tenured); students (from the locale, global, web, part time, only humans, all ages); location (from campus, or remote, or …); and curriculum (why not action learning; should students design the curriculum themselves?). The key is to create an organisational functions chart and then search for new structures to engage in those functions.

The second way to create alternative futures is via scenarios. Scenarios are the tool *par excellence* of futures studies. They open up the present, contour the range of uncertainty, offer alternatives, and even better, predict.

Single variable
Double variable
Archetypes
Organisational
Integrated

Figure 8. Multiple scenarios method

There are multiple scenario methods (Figure 8). The first is the multi-single variable. This is derived from the futures triangle. Based on the images or the drivers, a range of scenarios or stories/pictures of the future are created. Scenario one could be: "Return to traditional values" where students engage in rote learning, obedience to teachers and principals is paramount, and testing is the main criteria for success. A postmodern scenario would be the university or school as an *à la carte* menu—students pick and choose what they wish to study. A "global virtual or invisible school/university" scenario would be totally technologically driven. Students would rarely physically assemble, preferring webcams, wikis and other virtual meeting spaces.

The second method—the double variable method—identifies the two major uncertainties and develops scenarios based on these. This method, among others, has been developed by Johan Galtung (1998; www.transcend.org). For example, for the futures of education, two critical uncertainties are the site of change (global *vs.* tribal) and the level of change (status quo or transformation). Based on these uncertainties, four futures are possible (Figure 9). The first future is "Corporatopia". In this, education is global and focused on creating economic wealth. National boundaries are transcended through the new information and communication technologies. The inner story is: "I and It". The second is "National". This is education for national competition. The goal is to win against other nations by enhancing the skills and intelligence of the populace. The inner story is "us *versus* them". The third is "Values education". The present seeks to transform the future by rediscovering the past. Traditional values of honour and trust are primary—it is these values that are most important for creating a good society. The inner story is: "Recovering we". The final scenario is "Gaian learning". This is education that is planetary in scope, challenging traditional disciplines and seeking global solutions. The inner story is "we".

Developed by James Dator, the third method articulates scenario archetypes (1979; http://www.futures.hawaii.edu). These are:

- Continued Growth—where current conditions are enhanced: more products, more roads, more technology, and a larger population. Technology is considered the solution to every problem. Education in this scenario is about preparing students for a globalised technological world. However, the context of this competition is national, thus, the goal is education for national competitiveness in the world economy.

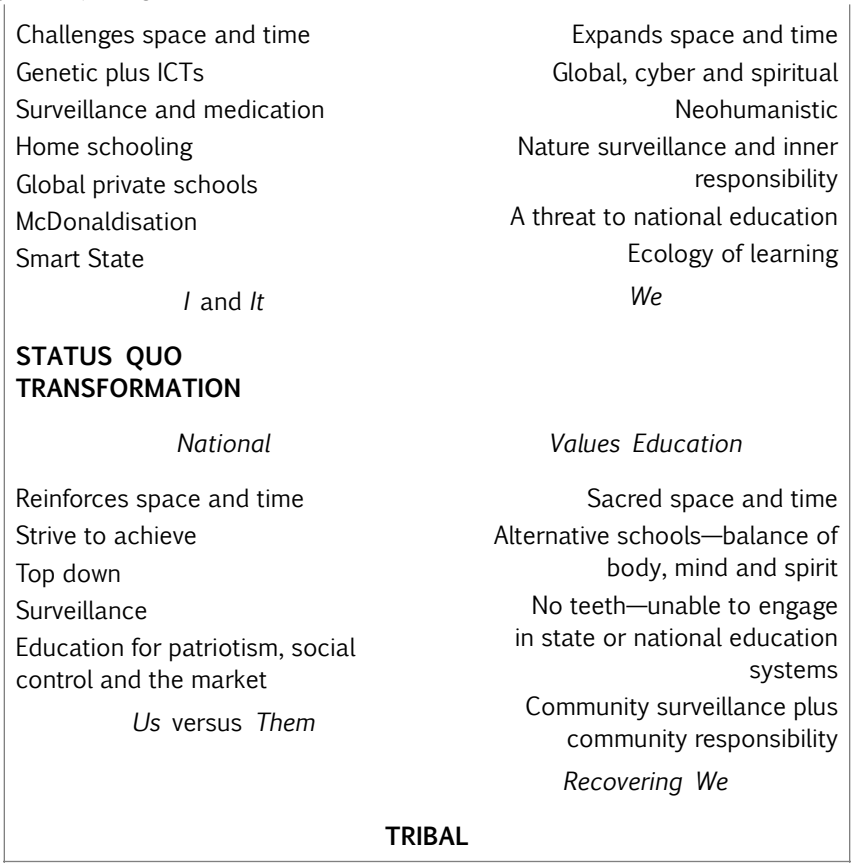

Figure 9. Four futures

- Collapse—this future results as Continued Growth fails. Collapse is inevitable as the contradictions within and between the following are too great: between the economy and nature; between men and women; between the speculative and the real economy; between religious, secular and postmodern approaches; and between technology and culture. In this scenario, educational systems are unable to keep up with the pace of change. Universities, for example, are outflanked by multinational corporations. Educational subsidies (or investment) are reduced as nations attempt to become more competitive. The best professors leave the public sector as they search for higher salaries and more autonomy. Public education becomes irrelevant, no longer linked to emerging futures.
- Steady State—this future seeks to arrest growth and find a balance in the economy and with nature. It is a balanced, softer and fairer society. Community is decisive in this future. Steady State is both back to nature and back to the past. Human values are first here. Technology is often

seen as the problem. In education, this future would be about focusing on community and environmental values. The purpose of learning is to create a better society. The exaggerations of globalism—consumerism, market failures (climate change, for example)—are reduced. Education is seen as an investment and not as a cost. Individual and collective discipline are seen as critical values for moving forward.

- Transformation—this future seeks to change the basic assumptions of the other three. Transformation comes out either through dramatic technological change (artificial intelligence eliminates the courts, bureaucracy, much of schooling, and many forms of governance; genetics changing the nature of nature, for example) or through spiritual change (humans change their consciousness, not just values, but the experience of deep transcendence). In the technological variant of this future, education would be foundationally transformed. Schools would disappear, students would learn from everywhere and anytime, the limits of space and time would be dramatically reduced. In the spiritual variant, meditation, yoga, emotional intelligence and mediation would be the focus. The purpose of education would be self-realization and planetary transformation. This would not be a return to the traditional ashram, however, rather, the ashram would be transformed as well—becoming far more global and embedded with new technologies.

Taking these four scenarios, one can incast or articulate how one's organisation (school or university) would look in each of these scenarios. I will focus here on a particular part of the world economy, East Asia. Will East Asia (Table 4) continue to grow, becoming more and more the centre of the world economy, or will there be a collapse because of lack of transparency, because of overgrowth leading to SARS-like diseases, or because an open economy challenges authoritarian leadership systems? Or will East Asia find a neo-Confucian balance, focusing neither too much on material values nor on tradition? Or can East Asia transform: will dramatic changes in science and technology (robotics and gaming) change culture; will a Taoist/Zen resurgence deeply transform the patriarchy of Confucian culture?

In Continued Growth, education would be about testing, graduating so one could get a job in the right corporation or ministry. Education is a commodity—one works hard, sacrifices for the future, so that one can become wealthy. East Asian universities compete globally. In Collapse, education ceases to be of utility, what has been taught has only made the world worse—knowledge has become reductionist, unable to deal with the global challenges. Instead, education would be far more survival-based, passing on skills to survive long term economic downturns. In Steady State, education would be about the balance between material and spiritual; nation and globe; instrumental and ethical values. In the Transformation scenario, education would be created by students, they would produce knowledge. New technologies would transform schooling and universities in East Asia. In the spiritual variant, meditative practices would form the basis of a good education.

Table 4. Incasting East Asian education

Scenarios	Continued Growth	Collapse	Steady State	Transformation
Description	East Asia continues to grow, becoming the centre of the world economy	Overgrowth, lack of transparency, SARS-like diseases, and authoritarian system lead to a collapse	Neo-Confucian balance created, balancing material values and tradition	Dramatic changes in science and technology transform East Asia. Resurgence of Taoist Zen culture transforms Confucian culture
Education	Testing and global competition. East Asian universities on the rise	Education is part of the problem—does not challenge the paradigm	Education is about virtue and balance	Education is student and technology driven, and even run. Meditation practices are central and spiritual intelligence is foundational.

Developed by Peter Schwartz (1995, 1996) of the Global Business Network, the fourth model of scenario writing is organisational focused. The scenario structure is composed of four variables: best case (where the organisation desires to move towards); worst case (where everything goes bad); outlier (a surprise future based on a disruptive emerging issue); and business as usual (no change). In a project for the Australian Government Pharmaceutical Industry Alliance, this method was used (Table 5).[vii] The preferred scenario was "Science Olympics" wherein the educational system is focused on a science curriculum that is attractive and engaging. It is valued the way sports currently are. There is investment and winners are rewarded. The worst case was a long term recession where investment for biotech dries up, and companies are saddled with decreased sales even while they have to meet societal obligations for delivering affordable pharmaceuticals. The brightest would leave the country for brighter horizons elsewhere (Singapore, South Korea or the UK). Science education lags dramatically behind other areas (information and communication technology and business education). In the outlier scenario, genetics and digitalisation change the nature of drugs (a pharmaceutical factory in your body, monitoring your daily needs, or gene therapy eliminating many diseases and thus the need for drugs). Education uses the products from the science and technology revolution in dramatic ways—intelligence drugs and even gene enhancement. Research is translated into products. Business as usual would be no clear strategy, other nations steaming ahead, pharmaceutical being criticised by the public and science not considered an attractive field for young persons.

Table 5. Four scenarios of education

Scenarios	Best Case	Worst Case	Outlier	Business as Usual
Description	Science Olympics The education system is focused on science. The best and brightest pursue degrees in science. Scientists are like sports stars.	Long term recession. Investment dries up and best and brightest leave for overseas. Those who stay, pursue safe government jobs, or are unemployed.	Genetics and digitalisation change the nature of drugs, i.e., gene therapy eliminates numerous diseases. Education for science and technologies—research leads to products.	No clear strategy, losing out to other nations and pharmaceutical industry criticised by the public. Education loses its way, direction comes from a variety of conflicting stakeholders.

The fifth scenario methodology has four dimensions: the preferred, the world we want; the disowned, the world that we reject or are unable to deal with; the integrated, where owned and disowned are united in a complex fashion; and last is the outlier, the future outside of these categories. For example, in a workshop for Brisbane City Council[viii] on refreshing the vision for Brisbane 2026 (Table 6), in the preferred, employees desired a more multicultural organisation, gender partnership, a green city focused on sustainability, a strong balance between work and home, a learning and healing organisation, and even a focus on spiritual practices and values. The combination of these characteristics would make Brisbane unique. The disowned, they believed, was the economic (how will we make money) and the strategic competitive—can we compete if we are more balanced in a dog–eat–dog world—and the material: issues of engineering, roads and garbage. In the integrated scenario, they saw that sustainability may give them a competitive edge; green technology principles could be applied to waste disposal and to road construction (focused not just on roads but on enhancing travel choices *vis a vis* bikeways, light rail, cars, buses, taxis and walking). The integrated scenario would decrease pollution, enhance longevity. Spiritual practices would likely increase productivity as individuals had more clarity about their goals. A learning and healing organisation that was skills-based would increase productivity and retraining would ensure that the city was efficient, adapting to changing conditions. The outlier was new diseases challenging the nature of the city. Education in this future needed to be about frameworks that ensured that tomorrow's problems were identified.

Table 6. Four scenarios for Brisbane

Scenarios	Preferred	Disowned	Integrated	Outlier
Description	Multicultural Gender partnership Work-home balance Sustainability Spiritual values Learning and healing	Economic—how to make money Strategic competitive Material—engineering, roads, garbage Skills-based education	Sustainability gives the competitive edge Green technologies can be applied to waste disposal and road construction Transformative learning that includes reflection and skills.	New diseases challenge the city Education for alternative futures—for ensuring tomorrow problems are identified today

Transforming the Future

The final pillar is transformation.

In transformation, the future is narrowed toward the preferred. Which future do individuals desire? The preferred future can result from scenarios. It can also be created by a process of questioning. Questioning consists of asking individuals about a preferred day in their life in the future. What happens once they wake up? What does their home look like? What type of technologies do they use? Who do they live with? What is the design of their home? What types of building materials were used? Do they go to work? What does work look like? Do they travel to work? How? What do they eat? How does one learn? Where does one learn? Through which technologies? These questions force individuals to think in more detail about the world they would like to live in.

The preferred future can also be discerned through a process of creative visualisation. In this process, individuals are asked to close their eyes and enter a restful state. From there, in their minds' eye, they take steps to a hedge or wall (the number of steps is based on how many years into the future they wish to go). Over the hedge is the preferred future. They walk into that future. The facilitator asks them for details such as: Who is there? What does the future look like? What can they see, smell, hear, touch, taste? Intuit? This exercise articulates the future from the right brain—it is more visual.

The three visioning methods—the analytic scenario, the questioning and the creative visualisation—are then triangulated to develop a more complete view of the future.

In a workshop for a state government ministry of education, the vision that emerged (Inayatullah, 2005) (after three days of workshops using the six pillars approach and based on the three visioning methods) had the following attributes:

- No differentiation between teacher and student—flexible roles and deep learning environments;

- Technology embedded in classrooms (not as an externality but merged with the environment);
- Global education—direct contact with other children, multiple languages, multiple cultures—true appreciation of different ways of knowing;
- Student-based , happy children, learning-based;
- Multi-age, not grade controlled;
- No school uniforms, flexible; and
- Community, truly local, and global, truly planetary.

When groups go through such a process, they are inevitably inspired. However, *a loss of hope can quickly set in if pathways to achieve the vision are not set in place*. That is, the system has numerous weights and from CLA, we know that there are inner stories that mitigate against transformation ("it won't work here", for example). To overcome these weights, backcasting is used (Figure 10) (Boulding & Boulding, 1995).

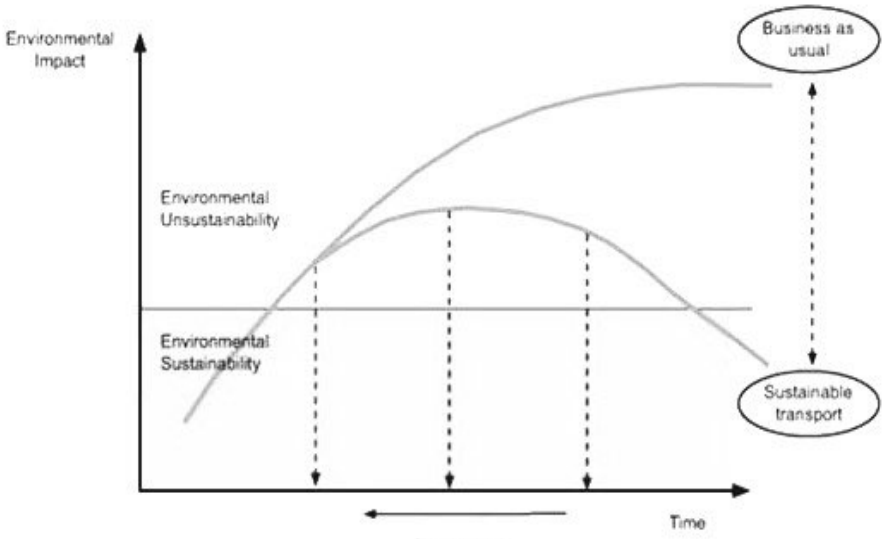

Figure 10. Backcasting

This method works by moving individuals into the preferred future. I then ask, in the instance of the preferred, what happened in the last 20 years to bring us to today? What are their memories of the last 20 years? What needed to happen? What were the trends and events that created today? Backcasting requires imagination … but as well logic—a sense of cause and effect—what has to have happened to create the desired future. Backcasting fills in the space between today (the future) and the past. Doing so makes the future far more achievable. The necessary steps to achieve the preferred future can then be enacted. This can be done via a plan or, far more effectively, via action learning steps, where a process of experimentation begins to create the desired future. This can be a budgeted for transition strategy or a full scale re-engineering. Backcasting can also be done with

any particular scenario, for example, the worst case. Events and trends that happened to create the worst case are articulated. From there, pathways are developed to avoid that particular future.

What happens though when there is conflict between visions of the future? Johan Galtung's transcend method (www.transcend.org) is an excellent way forward. It focuses not on compromise, or far worse, withdrawal, but on finding win–win solutions. To do so, all the issues that are contested in the two visions need to be spelled out. And then, through a process of brain storming, alternatives creating, new ways to integrate the visions can occur. In one case, one group desired a green sustainable city; another group a far more exciting modern international glamorous city. Through the transcend method (Figure 11), the Greens understood that their city would become boring. They thus realised that the glamorous vision was a way to recover that aspect of their disowned personalities, but also that the modern dimension of the city could help them innovate. The modernists understood that without sustainability as a guiding principal there would be no way forward for anyone—both aspects of the vision needed each other.

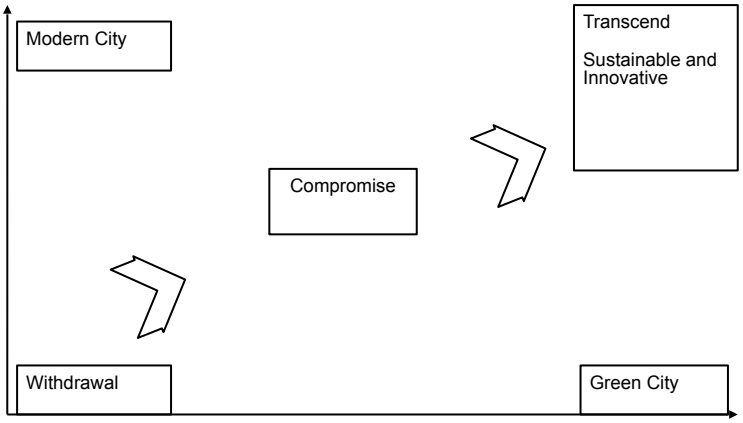

Figure 11. The transcend method

In an educational context, there may be conflicts between a "Corporatopian" vision and a "Gaian learning". It may be that each needs each other—the corporatopia providing the capital and the Gaian providing the necessary pedagogy to ensure the thrival of the planet. A corporatopia would provide efficiency, as the Gaian learning provides slower and deeper reflective time.

The study of the future thus has six foundational concepts and six pillars. As the world becomes increasingly heterogeneous, as events from far away places dramatically impact how, where, when, why and with whom we live and work, futures studies can help us recover our agency. By mapping the past, present and future, anticipating future issues and their consequences, being sensitive to the grand patterns of change, deepening our analysis to include worldviews and myths and metaphors, creating alternative futures, and choosing a preferred future and backcasting ways to realise it, we can create the world we wish to live in.

Futures thinking does not wish to condemn us to hope alone.[ix]

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[i] The Indian steel company Mittal is even eying purchasing the football club, Red Star Belgrade.

[ii] The *Oxford English Dictionary* defines meme as: "An element of a culture that may be considered to be passed on by non-genetic means, esp. imitation".

[iii] The work of Riane Eisler is exemplary—www.partnershipway.org.

[iv] The Club of Rome's *Limits to Growth* and other studies are modern examples of this.

[v] Of course, those who develop the litany require great—not only analytic—capability, but also the capacity to touch the system, the worldview and myth/metaphor level. A litany is not a litany unless it has something to rest on. For example, the litany of economism rests on the world financial system which rests on the worldview of capitalism which rests on the myth of greed, the invisible hand, and self-interest.

[vi] This was developed at the Hawaii Judiciary, particularly as input into the Hawaii Judiciary Foresight Conference, Honolulu, 6 January, 1991.

[vii] August to October, 2001—Melbourne, Brisbane and Sydney. The full project report is available from the Australian Government's Department of Industry, Science and Resources.

[viii] Organized by Jennifer Bartlett of Brisbane City Council, 3 March, 2006, Brisbane, Australia.

[ix] To paraphrase John Cleese from his movie *Clockwork*: "despair I can handle, it is hope that is the killer".