

Learning for Success in an Emerging Planetary Society

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Education is the most important thing we do to prepare people for future success. Indeed this is the primary role of education. However we mostly implement education reforms without trying to understand what the future will be like or what skills or knowledge we will need to develop to be successful in this future. We tend to make changes to education by examining current problems both in society and in the education system itself and this evaluation is usually used to determine the agenda for education reform. This is what I call a problem-centred approach. It involves continuous improvement for it tends to accept existing trend projections and strategic pathways, and concentrate on innovating better ways to accomplish current tasks, while at the same time solve existing and emerging problems. However marginal and incremental change, and continuous improvement important as this is, is not enough.

Doing old things better, and removing or reducing undesirable aspects of the present, merely creates a future education system which is less mediocre. To construct a magnificent system requires the envisioning of a magnificent education system. It is time we imagined a magnificent education system and then set out to create it.

The young people currently in our schools will spend their whole lives in a 21st interdependent Planetary Society dominated by an emerging paradigm which I call *Planetism*, which will dominate global values by about the year 2020. There are ten key areas which require the attention of the education system, if it is to ensure that our young people embrace the values and develop the capabilities they will need to thrive in, and contribute to, this emerging interdependent Planetary society. Implementing changes in these key areas will create a large strategic agenda for the transformation of our current education system.

Meeting these challenges will lead to the creation of many educational and learning innovations, and many new educational enterprises and entrepreneurs. Education and learning for future success will become the largest 21st century industrial sector of all: the *human development and capability building sector*.

If we want to create an outstanding education system we must imagine it first. We cannot work to create a future which we do not first imagine. There is very little imagination currently being devoted to imagining how the education system could be different to the current system. Marginal and incremental change, and continuous improvement important as this is, is sometimes not enough.

If we are to design an education system most likely to guarantee success in the future and design ways of learning which will produce the most effective and equitable learning outcomes, then we need to ask questions such as :

- *What skills, knowledge and capabilities will an individual , organization or community need in order to thrive in the future ?*
- *How do these differ from the skill, knowledge and capabilities which are being developed now in the education system?*
- *What new educational curriculum ,learning regimes, systems and structures do we need to create to endow these skills, knowledge and capabilities in the next generation?*
- *What do we need to replace, improve , initiate and nurture to achieve this outcome?*

It is extraordinary that so little thought is given by educational planners to the nature of the world in which current school students will spend their adult lives, that is, in the years beyond 2020. If there is one place we should think in terms of intergenerational strategies, it should be in our planning of education.

Education planning is also too problem centered and not sufficiently mission oriented : It responds to problems but it does not do enough to prepare people to contribute to and participate in new strategic directions. For example it develops a strategy to overcome teacher and nurse shortages, but it does not have a clear program to ensure the availability the skilled people to help fulfil the government aspirations in multimedia and biotechnology , which are two current strategic directions of government industrial policy. Stopping a bad thing from happening will not make a good thing happen.

Education does not plan effectively for preparing people prepare for 70 % the job categories which will exist in the year 2020 which do not yet exist. Even though the importance of preparing a knowledge based industrial future is recognized, there is no detailed planning in the education system for such a future, other than promoting general aspiration to maximize retention in the education system . The bottom line is that education is not future oriented enough.

The Agenda for Educational Reform

In my work I try to help people to get to the future first . Success will go to those who achieve it . I am reminded of comments the President of Columbia University in the 1890s. He noted there are a few people who *make things happen*, there are rather more who *watch things happen* and there is the rest of humanity who say *what happened* ?

Much of my own work is dedicated to working with those individuals, organizations ,communities and nations who find themselves in the third category and who would like transform themselves so that they can comfortably live in the first category and thrive from doing so..

Education and learning is the most important process we have to prepare for the future. Our future health will be determined by how well we are prepared for emerging 21st century society. Our wellbeing in the years ahead will be determined by how well our young learn to get to the future first and to continuously transform themselves to deal with change, and emerging threats and opportunities. Assisting our young to transform themselves into successful healthy adults in healthy and sustainably prosperous communities, and in a sustainably prosperous planet should be the major goal of education. What should education become to achieve this outcome?.

During the last few years I have commenced using the 'thrival'. You won't find this word in any dictionary, at least not just yet. However, I use the word to make a particular point. We have a word 'survival' to describe an aspirational goal but not 'thrival'. The lack of such a word says a lot about the lack of loftiness of the aspirations of English speaking people. I also use the word 'thrivability'. Success will go to those who aspire to thrive and develop the ability to thrive. Most of the job categories which current young people will be doing in their mid career, that is in the years beyond 2025, have yet to be invented. The same young people will be living in an interdependent planetary society in their middle life. The role of the education system should be to assist our young to thrive in this world. I see very little evidence that our young are being adequately prepared for this future.

It is extraordinary that so little thought is given by educational planners to the nature of the world in which current school students will spend their adult lives, that is, in the years beyond 2020. If there is one place we should think in terms of intergenerational strategies, it should be in our planning of education.

Here is my list of the skills and capabilities which a young person will need to thrive in the years beyond 2020, to achieve wellbeing in this society. It is an agenda for the transformation of the education system for 21st century success. It involves developing the skills and capabilities to realize 10 different yet interrelated educational outcomes. These outcomes are as follows.

- Embracing a personal value system which is compatible with emerging 21st century paradigms and realities, which in turn will determine the nature of future markets, industries, jobs and ethics. This emerging 21st century paradigm is one I call Planetism. To carry a value system of yesteryear, such as modernism, into the future will invite becoming a misfit.
- Being a leader, first of self and then of others, shaping one's own life/career path rather than being shaped by the future, and creating one's health and wellbeing: becoming a path maker rather than a path taker.
- Developing a successful career path with an emphasis on job making rather than on job taking. This involves utilizing *insight* to determine one's destiny, what is one's aptitude and passion; *foresight* to understand emerging trends, opportunities and possibilities and being able to strategically position oneself in a 21st century industrial structure ; and *hindsight* to learn from one's experiences, so as to inform one's career and personal development.
- Being a lifelong, learning-driven and just-in-time learner to update skills and adapt easily to changing circumstances. Assuming responsibility for one's own learning, seeing learning as an essential part of life. Knowing how one learns most effectively and being able to select the appropriate learning pathway from a number of customised options provided by the education system.
- Being an enterprising innovative person, constantly seeking to do old things better and new things first. This requires a major focus on life/enterprise skills, and in continuously developing one's own creativity and enterprise, and respecting it in others.
- Becoming a successful 21st century adult. This includes being able to initiate and conduct successful interdependent relationships and participate as a responsible adult in 21st century communities and organizations. Becoming a skilled parent.

- Being aware, respectful, tolerant and supportive of intercultural and religious diversity. This includes understanding other cultures, including languages.
- Understanding that 21st century economic success will be based on the core forms of human creativity: the arts and humanities, the social and natural sciences, and the technologies. Being able to understand their importance in a 21st century knowledge based industrial system and being able to be successful in such a system .
- Comprehending that 21st century success requires that individual rights are balanced with responsibilities to others, to the community, the environment, the planet, and future generations. This is the foundation of a 21st century civil society.
- Knowing the implications of and opportunities offered by the creation of a 21st century society which is sustainably prosperous, with sustainable development, consumption, production and lifestyles. Sustainable prosperity is a combination of four kinds of prosperity: economic, ecological, social and cultural. A major challenge and opportunity for the 21st century is to find ways to create prosperity in one of these without creating poverty in another.

Meeting these challenges will lead to the creation of many educational and learning innovations, and many new educational enterprises and entrepreneurs. Education and learning for future success will become the largest 21st century industrial sector of all: the *human development and capability building sector*.

If we are to better understand our industrial future and the kinds of innovations which will be part of this future, I need to introduce another concept relating to innovation. There are two kinds of innovations which I call Ways and Wares. Ways are the social innovations, such as changes to human behavior, alliances, professional practices, attitudes and lifestyles which are needed to accomplish a particular outcome. Wares are the physical innovations, the designs, products, services and technologies which are needed to create a particular outcome. For learning, we can have learning ways and wares; for sustainability, green ways and wares; for health, we can have health ways and wares. In each of these categories of innovation we can further split ways and wares into other forms, as will become clear from this paper.

Improving the Three Education Problem Periods

There are three areas in the primary and secondary sector which I believe are failing significantly. These are:

- the first five years of life;
- the child/adult transformation (Year 9) (puberty); and the
- secondary/tertiary transition (Year 12).

I will discuss the second of these issues in detail later . However I want to deal with the other two now.

The first five years of life.

Mark Twain once said that the greatest denial of human rights he knew was that children do not have the right to pick their own parents . Our first teachers are our parents . We arrive at school advantaged or disadvantaged by the capabilities of our

parents as teachers . Those who are disadvantaged cost huge sums in remedial education and often spend the rest of their lives disadvantaged. The first job of any school should be to educate parents as teachers . Therefore a home visiting system ,or in school clinics for parents for parents should be contemplated . This way the school can become an even better community facility. The aim should be should be to ensure that the high natural learning motivation of a two year old child should be nourished to the maximum when they are two, not wasted and made up to them later at huge cost. A stitch in time saves nine . Let it be the case with education. Then we can transfer the remedial budget into something more productive.

Two-year-old children are natural learners; they cannot stop learning, their desire seems insatiable. For 2-year-olds, learning is not only essential it is also fun. However, by the time many children are halfway through secondary school all the pleasure of learning has vanished and with it much of the desire. Motivation has become driven by external factors such as exams rather than by curiosity. That is, the natural endowment of life-long learning has been converted into compulsory, early-in-life learning, which has killed much of the pleasure but, more importantly, kills the motivation to be a life-long learner. We should ensure that children arrive at school as enthusiastic, life-long learners driven by curiosity, and that they stay that way throughout their lives. When many children first arrive at school they are already showing symptoms of advantage or disadvantage which some never overcome, despite the efforts of the education system. In addition, schools spend large amounts of money on remedial education, much of which would be unnecessary if schools went into the homes in their communities and helped parents to become good teachers of their own children. A preventative program would produce net savings to the education system as well as providing a huge bonus for social and economic equity. This program is now being pursued by Mark Latham the new leader of the Federal ALP.

The secondary/tertiary transition

It is time to consider whether the VCE actually achieves anything of real value. The VCE provides a one-size-fits-all ,one stop shop , mechanism to provide an economically viable queuing and sorting system to manage tertiary education entrance and score achievements in secondary education. VCE scores do not predict success in tertiary education or in life . they measure the quality of VCE coaching received in schools and the level of support from the home environment The time has come to seriously review the year 12 assessment system . Why shouldn't the entrance to tertiary education or the work place be treated as a job application , with a the production of a resume , a system of referee review and a face to face interview ? With the development of a mature age entrance system it is possible to bypass the system by staying out of the formal education system for a couple of years.

Why should a system be suitable for 17 year old school leavers and not be regarded as necessary for 20 year olds who have been out the education system for 3 years? It is also recognized that high achievers in the VCE gain entrance into the high prestige courses such as medicine or law without any indication of their suitability, aptitude or commitment to these particular professions . The result is a higher than necessary drop out rate . Cost Savings at tertiary entrance assessment time through the use of this poor assessment system of potential for success in tertiary education, actually adds to cost in tertiary education because the rates of dropping out are higher than they should be. Motivation is the single most important yardstick of success in tertiary education and in life . The VCE does not assess motivation. Many highly motivated students currently miss out because

their positions are taken less motivated high scoring VCE achievers who , because they have less commitment, drop out either while they are tertiary education students ,or soon after when they commence their careers.

If we assess the time devoted to coaching young people to do well in the VCE and evaluate the opportunity cost of using that time in other areas including for accomplishing some of the other outcomes proposed in this paper, it is easy to imagine using this time more productively. The VCE is efficient in a narrow economic sense because it provides low cost per capita assessments for a large number of people . However it is wasteful from perspective of both students and tertiary education institutions.

The Agenda for Education for 21st Century Thrival and Thrivability

1. Embrace a personal value system which is compatible with emerging 21st century paradigms and realities.

In my book *Ideas for the New Millennium*, I outlined what I call the emerging paradigm of Planetism. Planetism is a product of globalization (forming interdependent relationships through interconnected trade, communication, supply chains, and ecological vulnerability); tribalisation (breaking up of old empires into smaller tribal states through self determination); and technological change (facilitation of awareness and knowledge of the other, and of relationships between entities with shared aspirations but which are separated by space and time). We can predict both our industrial and economic future and our ethical future by tracking how values change. From this we will be able to predict and understand the markets and ethics of the 21st century. Future values will determine what people will find valuable and value. What people value will determine what they will want more or less of, or want to buy and sell, and hence what markets will form. From this we can predict what innovations, products and services will be in demand, and made, bought or sold. This in turn will inform our ethics, what behaviours will be approved or disapproved of.

This paradigm will inform the markets, industries, enterprises and ethics of the year 2020 and beyond. The Post Modern present is a period of transition between two large global paradigms: namely *Modernism*, the paradigm of the *Cowboy*; and *Planetism*, the paradigm of *Spaceship Earth* or the *Cosmonaut*. Planetism will be the dominant global paradigm by the year 2020 and it is likely to dominate the global culture for the rest of the 21st century. The key values of the transformation of the global culture to Planetism are shown in the following table.

The Cowboy Culture/Modernism (1960)	The Spaceship Culture/Planetism (2020)
Individualism	Communitarianism
Independence	Interdependence
Autocracy	Democracy
Humanity separate from nature	Humanity part of nature
Unsustainable production/consumption/development/lifestyles	Sustainable production/consumption/development/ lifestyles
Patriarchy	Gender equality
Intercultural & inter-religious intolerance/hostility	Intercultural & inter-religious tolerance/harmony
Conflict resolution through confrontation/conflict	Conflict resolution through negotiation/mediation

From the values of Planetism one can predict the nature of 21st century industries, products, services and ethics. Therefore, some of the emerging innovations and industries will be those which help realize sustainable lifestyles and consumption, intercultural tolerance, mediation and conflict resolution, and security to name a few sources of 21st century wealth generation. These will become major components of our industrial future. Each of these core areas of concern can be further broken down. For example, environmental sustainability will require us to find ways to live within a perpetual solar income, turn waste into food, protect biodiversity and avoid collateral damage to the environment. Those who develop innovations, the ways and wares, to realize outcomes will become the wealth generators of the 21st century. Those nations which develop people who excel in these areas will prosper most in the next generation. For example, the 21st century Planetist market place will demand new mediation ways and mediation wares, or new security ways and security wares, and so on.

This paradigm shift will favor educated people and women, and disadvantage men with low educational attainment and poor relationship making capability. These boys/men are already being seen to fail in current 21st century society; they include the emerging 21st century cowboy misfits and outcasts, including the schoolyard bully, the road raging alienated youth, the organized crime stand over man, the domestic violator, the religious fundamentalist, the racist redneck, the trade union intimidator, and the corporate cowboy. Education needs to ensure that we create a nation of cosmonauts (adherents of the Planetist future) rather than cowboys (adherents of the Modernist past).

2. Be a leader, first of self and then of others, shaping the future and one's own life path, rather than being shaped by the future. Becoming a *path maker* rather than a *path taker*.

Because I am a futurist, many young people ask me to help them make decisions about their careers. They want to know where the jobs will be in the future so that they can plan their career path. I tell them that 70% of the job categories at the time when they are in mid career have yet to be invented and many current job categories will have disappeared by then. The more auspicious and effective way to develop your career paths is to first look inside yourself and discover your destiny. Fulfilling your destiny defines your work, that which you do to give meaning to your life. The next step is to turn your work into your employment, thereby generating financial security. This you do by matching your work to emerging industries, job markets and job categories; thereby developing a fulfilling career path from realising your destiny.

Ralph Waldo Emerson wrote :

Do not follow where the path may lead

Go where there is no path and leave a trail.

I don't claim that this should be the journey for everybody. Many of us are content to take life as it comes, and I personally make no judgements about anybody's chosen way of living. I know that there is much one can and should do to embrace the present and to be fulfilled in the present; to achieve a harmonious balance between *being* and *becoming*. However, without of a sense of *becoming*, of forward purpose incorporating self transformation and growth, and through this sensibly preparing for the future, we will be

swept up and away, be disadvantaged by the unprecedented rate of change around us. The current rate of change means that if we want to make a difference then we must commit ourselves *to become* as well as *to be*. We will either shape our future or the future will shape us.

The future is part change, part choice. How much of each of the proactive or reactive approach to strategic action we prefer to embrace in our lives is a personal decision.

As Goethe, in *Faust*, pointed out, the bold inherit the Earth; it is better to be victor than victim; and the journey from *change taker* to *change casualty* can be a short one.

We need to better recognize the difference between leader and manager, and be good at both, first in terms of management and leadership of self and then of others. Leaders are future makers and path makers, while managers are future takers and path takers. All of us are part leader, part manager. It is important that all people learn the difference between them and to utilize both of these roles in their lives, not just one of them. The most important act of leadership is leadership of self. We cannot hope to lead others effectively if we are unable to lead ourselves. I know many so called leaders who try to lead others while making a total mess of their own lives. Australia is currently an over-managed and under-led country. It constantly puts managers in positions where leaders are needed. Many Australians fail to understand this critical difference between leadership and management. Education should first focus on encouraging students to become effective leaders of self before they become effective leaders of others. Leadership refers as much to how we plan our own lives as it does to planning the future of others, and responding to the opportunities and threats presented by the world around us. Here are the essential differences.

Managers	Leaders
Respond to change	Create and Shape change
Path taker	Path maker
Do the thing right	Do the right thing
Guided by fate	Guided by destiny
Control	Facilitate
Work in the organization	Work on the organization
Probable Futurist: What will be	Preferred Futurist: What should be
Problem-centered strategist	Mission-directed strategist

The development of leadership of self and other is becoming much more essential in a 21st century where long term employment in large organizations, characteristic of the industrial age, is increasingly rare and contract employment, job making and self employment is becoming more common. The development of a leadership/management curriculum should become part of mainstream education.

Leadership is also affected by *heart power* : the amount and kind of heart power we embody defines the kind of leader we are.

Leadership involves what I call ‘neck down’ components including the heart, as well as the intellect. The leader embodies six qualities which come from the heart rather than the head. The leader should be:

- *confident*: having self belief but without hubris.

- *courageous*: going where others dare not, overcoming self interested opposition.
- *committed*: doing what must be done, being assertive not aggressive.
- *considerate*: listening and responding to the opinions and views of others.
- *courteous* : showing respect in conversation.
- *compassionate* : responding with empathy to victims and the disadvantaged.

Nelson Mandela or Australia's Don Dunstan are marvelous at all of these . Such people are rare. Most of us are good at some, weak at others. With this list we can assess our capabilities in each of these and decide where more work is needed to grow our leadership capability ..

Management on the other hand is largely 'neck up', an intellectual exercise. It does not seek to engage the emotions in work. To these six C's we can add two more Cs which are necessary for effective leadership. This is the ability to:

- *conciliate*: building and nurturing interdependence and relationships by facilitating compromises which realize win-win outcomes in negotiations.
- *communicate*: articulating with both head and heart, ensuring both non verbal and verbal forms of expression convey the same message.

Leadership therefore embodies eight qualities and capabilities: confidence, courage, commitment, consideration, courtesy, compassion, compromise and communication.

3. Develop a successful career path with an emphasis on job making rather than on job taking. This involves utilizing *insight* to determine one's destiny, what is one's aptitude and passion; *foresight* to understand emerging opportunities and possibilities, and being able to strategically position oneself for careers in a 21st century industrial structure and in emerging industries and job categories; and *hindsight* to learn from one's experiences, so as to inform one's career development.

To get to the future first we must make three journeys. The first of these involves *insight*, understanding ourselves.

As Henry Ford said, 'The secret to a successful life is to understand what is one's destiny to do, and to do it.'

Destiny has two elements: what we are good at: *aptitude*; and what we love doing: *passion*. Fulfilling our destiny defines *work*, doing what gives meaning to life. The route to success involves turning *work* into *employment*, to generate a living from doing work and fulfilling that destiny. When we make a life's journey it is insight and self knowledge which increases to accompany accomplishments in the outside world. We develop our own capacity to make a difference as we learn how to fulfil our destiny.

The second journey is *foresight*: using our imagination to travel into the future in order to access knowledge about emerging possibilities, opportunities and threats.

The third journey we must take is to reflect on where we have come from, and how we arrived at where we are now. We must understand our own history and experience: *hindsight*, learning from past success and failure. I think that Australians, compared with

many other cultures, have considerable difficulty in learning, becoming wise, from experience and from reflection on their experience.

Those who do not learn from history are condemned to repeat it — George Santanya.

People need to learn to contemplate and reflect after making a mistake or failing to realize an aspiration, and seek to learn and make changes which result from this learning. How often do we accept responsibility for our mistakes and discuss these openly with our colleagues, partners, friends and families: not as a blame exercise but as a learning exercise?

One of the key issues we must understand is why we humans find that dealing with change is so difficult, why a common response to change is to resist it.

We humans do not like change. For Paleolithic humanity, change meant floods, earthquakes, volcanic eruptions, famine, wars and epidemics. Our biological inheritance is to fear change; it is encoded in our genes.

Biologically speaking, we are much better at being than becoming. I think we all need to become better at learning, including learning how to get to the future first. This is not a prescription for joining a 'dog eat dog' competitive society as some have accused me of advocating. In nature, there is competition but there is also cooperation. In life we need to become good at both of these and also become wise enough to know when it is better to be competitive and when to be cooperative.

Therefore, if we wish to make a difference in our own lives and to the lives of others, we must undertake what I call *destiny probe* (insight), *futures quest* (foresight) and *wisdom search* (hindsight).

By fully embracing *insight* and *foresight* a person can be transformed from a life as *future taker* and *path taker* to one of *future maker* and *path maker*. Many successful people do just this, such as great entrepreneurs and artists. What is inside is expressed by actions in the outside world. If we are to plan successfully for the future, insight and hindsight should accompany foresight.

4. Be a lifelong, learning-driven and just-in-time learner to update skills and adapt easily to changing circumstances. Assume responsibility for one's own learning, see learning as an essential part of life. Know how one learns most effectively and be able to select the appropriate learning pathway from a number of customised options provided by the education system.

This involves a new 21st century learning pedagogy with opportunities for the development in Victoria of new learning technologies and enterprises.

'Lifelong learning' and 'organizational learning' became buzzwords in the 1990s. It is recognized that both individuals and organizations must learn continuously in order to adapt to changing circumstances and to develop new skills and capabilities to thrive in a rapidly changing world. There is also recognition that any enterprise which seeks to be successful in the knowledge based industrial system of the 21st century needs to be led and managed in ways which maximise organisational learning. This is increasingly so because as contract work grows, rapid staff turnover can significantly undermine organisational memory.

However, lifelong learning and organisational learning are only two facets of the learning culture which must be developed in the 21st century. As part of my work with some Victorian school principals, I developed a pedagogy for a learning culture in collaboration with the learning consultant, Dr Julia Atkin. If learning is to be maximized, a new model and pedagogy of learning — a new learning culture — is needed. This learning culture should contain eight elements.

Learning Culture Component	Description of Learning Component
Lifelong learning	Continuously utilizing up to 10% of one's time to prepare for success on one's future life and work, and for future organizational success.
Learner-driven learning	Learning initiated and managed by the learner not the teacher/mentor, through the utilization of learner-driven learning technologies.
Just-in-time learning	Providing the opportunity to learn when curiosity and the need for knowledge, and gratification from learning, is greatest, including from remote sources, at home, and in formal learning and work environments.
Customized learning	Being able to learn more effectively because all learning opportunities and processes are customized to suit different learning and thinking styles.
Transformative learning	Designing learning for, and assessing the success of learning by, the transformation of students, because the transformation of people rather than the acquisition of knowledge is the major purpose of education.
Collaborative learning	Designing learning environments/processes to ensure learning is as effective in groups as for individuals.
Contextual learning	Providing a context to maximize learning by locating learning in real life and virtual real life environments which make learning more effective.
Learning to learn	Continuously improving the capability to learn and think.

Innovations for learning this 21st century culture requires that many innovations be created. We need lifelong learning ways and wares, learner-driven learning ways and wares, and so on. Those who create and market these innovations will become leaders in the biggest industry of the 21st century: human development and capability building. The invention and marketing of these ways and wares will be a major component of the 21st century economy.

I spend a great deal of time working with young people on their career options for the future. When they ask what they should study in their tertiary education I tell them to follow their heart and study what interests them, not what they think will generate a job. It is more important to be a committed lifelong, learner-driven learner than to know particular facts relating to one kind of work or another.

It is also pointless to prepare oneself for one of the current crop of job categories unless one expects to be fulfilled by doing this. To study for a job because the job seems to provide economic security or status, but without passion for the work entailed by that job, will create considerable misery and will also undermine the habits needed for lifelong learner-driven learning which is so critical for thriving in the long term. In the early 21st century the workplace is changing more rapidly than ever before. The pace of technological and social

change means that work skills are being made redundant at a faster rate. From my observations and discussions with colleagues, it seems that up to 50 per cent of the skills required in the newer, knowledge based industries become redundant every three to five years. If one looks at the rates of globalization and technological change and the development of tribalisation, which will lead to an increase in cultural customisation of products and services, it seems reasonable to deduce that in the next twenty-five years up to 70 per cent of all job categories are likely to change. Of this percentage, half of the existing job categories will disappear; the other half will consist of new jobs that do not yet exist. Other jobs will keep their present names but the nature of the work will change.

Technological change is one of the major reasons why workplace learning must be broadened from its traditional narrow base to the world of multiskilling. To maintain a robot, for example, it is necessary to know about mechanics, pneumatics, hydraulics, electronics and software engineering. All of these were individual disciplines and were the responsibility of individual workers, sometimes belonging to different trade unions. New technology is causing the traditional demarcations between skill areas to disappear, and the need to avoid technology-created demarcation disputes is one of the major reasons for the development of 'super' trade unions in the 1990s. The domains of electronic technologies and bio-technologies are also coalescing, as are the domains of the natural sciences, technologies and social sciences. Where these various domains overlap hybridization is occurring between them, and these areas of hybridization are now producing the greatest rates of innovation. Multimedia and learning technologies generally are a good example of this. In a world where cultural differences are often being celebrated, it is also likely that technologies will undergo greater degrees of cultural customisation: increasingly the domains of culture and technology are also overlapping.

5. Be an enterprising innovative person, constantly seeking to do old things better and new things first. This requires a major focus on life/enterprise skills, and in continuously developing one's own creativity and enterprise, and respecting it in others.

Innovation involves both doing current things better and new things first. This requires both imagination and creativity and an enterprise skill set, including

- assessing strengths and weaknesses;
- making decisions;
- working cooperatively in teams and groups;
- planning time and energy;
- carrying out agreed responsibilities;
- negotiating;
- dealing with power and authority;
- solving problems;
- resolving conflict;
- planning and managing projects;
- coping with stress and tension;
- creating one's own health and wellbeing;
- evaluating performance;
- communicating both verbally and non-verbally;
- developing strategic visions/action plans for self and others;
- thinking and intervening strategically and systematically to shape the future.

These could and should be taught and learned through the whole time in school, and the education system should be dedicated to developing these skills to a high level. As the world becomes more globalised and interdependent, and markets replace regulation as a dominant shaper of the future they are becoming even more essential for future success. They complement some of the other capabilities which will be developed in the Preparation for Adulthood focus.

6. Become a successful 21st century adult. This includes being able to initiate and conduct successful interdependent relationships and participate as a responsible adult in 21st century communities and organizations. Become a skilled parent.

I propose that Year 9 be totally reconstructed. The traditional program should be scrapped and replaced with a comprehensive *Preparation for Adulthood* program. As girls mature faster than boys, and girls are often going through puberty in Year 8, while the majority of boys undergo the same transformation into adulthood in Year 9, it could be given from mid Year 8 to mid Year 9. On the threshold of adulthood young people mostly lose their commitment to learning the traditional fare which is offered to them. However, there is much they want to learn at this critical time in their lives, when they are leaving childhood and are anxious to learn about the mysteries of adulthood. What they want instead is to learn *how can I become a successful adult?* Many initiatives in this area are merging. They include outdoor experiences, working on farms, and several which involve young people in community service. These are all excellent initiatives. But here is a need for a major reorganization of the whole education system to enable a flowering of many more programs of this kind.

On the threshold of adulthood, young people don't tend to learn what they are being traditionally offered. However if they are offered a curriculum of developing the capabilities required for successful 21st century adulthood there is evidence that they will become passionate and committed learners again. Where new initiatives are tried such as those which move learning into natural, remote or rural settings where skills for self reliance and cooperative behavior are developed, or in other initiatives which require students to become involved in community development, there are significant and improved learning outcomes compared with traditional teacher-driven and classroom-situated approaches.

Some of the tasks of a Preparation for Adulthood program would be to develop system wide programs to enable young people to

- nurture their own self esteem;
- respect others, including parents and elders;
- initiate, nurture and maintain successful relationships;
- develop healthy and sustainable lifestyles;
- become enterprising self-actualizing individuals;
- become leaders of self and then of others;
- become lifelong, learner-driven learners;
- create career paths which bring economic and social security;
- understand that individual rights should be balanced by reciprocal responsibilities and service to others and the community;
- respect and know how to nurture the environment and other species;
- respect and tolerate other cultures and religions, particularly indigenous cultures.

There would be many opportunities for the private sector to develop programs in these areas and provide them on contract to schools.

In his controversial book, *Iron John*, the American poet, Robert Bly, proposed that society needed to reinvent initiation, arguing that the initiation process in traditional and indigenous societies has been discarded by modern communities and cultures at enormous social cost. Bly points out that, for women, puberty manifests itself with biological change. Unless men can experience a cultural change that is as powerful for them as the biological change is for women, boys will never progress to fulfilled manhood.

Bly suggested that we bring back initiation as a mainstream concept. Through the reinvention of puberty rites or initiation in an appropriate form we could create cosmonaut tribalism, interdependent individuals, organizations and communities and ensure the maintenance of social and cultural cohesion in a globalised and tribalised Planet. Initiation should become a part of mainstream education in the years of puberty, even to the point of becoming the full time focus of education during these critical and vulnerable years.

Most indigenous cultures choose the years of puberty to provide their version of a formal education process. Indigenous cultures took this time so seriously that they prepared children for, and celebrated, this transformation through a program of education and ritual. They created warriors to service the needs of the community and deal with those who threatened hearth and home. Uninitiated men remained as children who were harmless in children's bodies, but in an adult body could do immense harm to a tribal community.

The re-invention of initiation is needed to aid the transformation from child to adult and, more particularly, to facilitate the transformation of cowboy children into cosmonaut adults. Initiation involves some gender-specific learning. Again, the preparation for adulthood involves the creation of numerous ways and wares.

Each of these aspects of adulthood can be an opportunity for innovation. For example, we can envisage ways and wares for healthy lifestyles, for intercultural respect/mediation/harmony, and so on.

7. Be aware, respectful, tolerant and supportive of intercultural and religious diversity. This includes understanding other cultures, including languages.

The planet is not only being globalised it is also being tribalised. Students should be encouraged to develop facilities in other languages and be immersed in at least one other culture. As part of an early childhood program, children could be encouraged to become multilingual in the first five years of life, particularly if more than one language is spoken at home. Likewise, all students should be introduced to different world views and religions through their student life.

8. Understand that 21st century economic success will be based on knowledge and content creation.

The core forms of human creativity are the arts and humanities, the social sciences, the natural sciences and the technologies. Students should be highly competent in at least one of these, have basic knowledge in all of them, and understand their importance in the knowledge intensive 21st century society. This is necessary if Australia is to create a high skill, high knowledge future for itself. At present, the major growth in jobs under the current Federal Government is in the low skill, low knowledge area. Students should be comfortable and familiar with, though not necessarily expert in, the four core 21st century generic technologies: namely, cyber technology (IT — information technology, KT — knowledge

technology and WT — wisdom technology), biotechnology, nanotechnology and advanced material technologies.

9. Understanding that 21st century success requires that individual rights are balanced with responsibilities to others, to the community, the environment, the planet, and future generations.

As a young person grows up their core relationships change from ones based on dependence as a child, to independence as an adolescent, and on to interdependence as an adult. Interdependent people understand that obligations are reciprocal and interdependent and there should be no such thing as rights without obligations. Some of the many realities of the 21st century interdependent society can be understood by examining issues such as

- global trade and the work of the WTO;
- global financial markets and international money flows and control;
- the expansion of the European community and the formation of similar communities in the Americas and Asia in the next two decades;
- the changing role of the UN system;
- climate change, the response of individual nations and companies to climate change, trade in endangered species, and the management of the global environment;
- industrial relations in a globalising world;
- the operations of the international criminal court;
- international crime syndicates and terrorism;
- intervention in the internal lives of 'rogue' states;
- smoking in public and gun control;
- loyalty schemes for customers and suppliers;
- global security and the war on terror.

All of these facets of the 21st century are changing the roles of governments, corporations and communities and the concepts of individual rights and responsibility to others and community. This is a world that our children will spend their whole lives in. They are being poorly prepared for this world at present by an adult world which barely comprehends these changes, including by the majority of teachers. The 21st century will be the century of the interdependent relationship.

The creation of an interdependent 21st century world has implications for how we think about freedom, and individual and human rights. Garrett Hardin once said that increasingly human society will be negotiating on which forms of *coercion we can be mutually agree upon*. The constraints being placed on individuals, nations and corporations by the requirements of global environmental protection such as climate change and trade in endangered species, and from security from terrorism, religious fundamentalism and 'rogue' states are just two manifestations of these changes. The decreasing power of individual governments to make a difference and the increased requirement for international cooperation to solve most global problems is another manifestation. Young people need to learn that a unilateral 'lone ranger' can cause major problems for others and eventually themselves in an interdependent multilateral global village and that it is the interdependent collaborator who will ultimately be successful.

10. Understand the implications of and opportunities offered by the creation of a 21st century society which is sustainably prosperous, with sustainable development, consumption, production and lifestyles.

The journey to sustainable prosperity is a journey of design, innovation, collaboration and negotiation which will provide some of the biggest challenges and opportunities of the 21st century and it will create a major component of the 21st century industrial structure.

The journey to a sustainable society is under way and will most likely be completed by about the year 2030. Doing things in a sustainable way means that we do them in ways which produce no collateral damage, so in essence we can carry on doing them forever.

Disadvantaged communities are poor, but their poverty can be in many forms. And many are also rich in some ways. Sustainable prosperity is a combination of a fair and reasonable balance between, and a maximization of each of, four forms of prosperity: economic, ecological, social and cultural. For each we can have both prosperity and its opposite, poverty.

To create economic prosperity while creating ecological poverty (eg, by logging a forest beyond its regrowth capability and the thereby creating ecological poverty) or, vice versa (eg, by leaving the forest untouched to create ecological prosperity and thereby creating economic poverty in a small timber industry-dominated community), is not creating sustainable prosperity.

To create economic prosperity (eg, through building a profitable mine in Northern Australia) and increasing social prosperity (eg, through increased access to social mobility and opportunity and through increasing community cohesion) while at the same time decimating an indigenous culture and creating cultural poverty, is not creating sustainable prosperity.

Most places are not poor in all of these simultaneously. Some areas of prosperity, such as cultural prosperity or ecological prosperity, can be used to create economic and social prosperity, if the mindsets and the organizational structures and frameworks are right. In some areas there is economic prosperity but ecological poverty because wealth has been created at the expense of the environment. Ecological prosperity can therefore be created through environmental remediation and renewal, a way to create economic prosperity by doing ecological good. Such actions are part of what I call the Earth Repair industry, which is a major emerging 21st century industry.

Wealth can be created in the poorest communities by finding ways to generate wealth based on utilising one form of already existing prosperity. In many rural communities the ecological prosperity can be a major source of wealth generation. In economically poor urban communities, cultural prosperity can be used to create economic prosperity.

- *Economic prosperity* involves the promotion of emerging 21st century industries. Seventy percent of the industries, products and services of the year 2025 have yet to be invented. Almost all the new industries born in the 20th century were born in cities, and there they stay. New forms of connectivity means that we can now locate many emerging 21st century industries in rural communities. It also involves increasing the collective bargaining power which rural communities have with the external world.
- *Ecological prosperity* requires the development of innovations and practices to live within perpetual solar income, turn waste into food, avoid and repair collateral damage to the environment, and nurture biodiversity.

- *Social prosperity* improves when rural communities enhance social cohesion and conviviality, and facilitate increased access to and opportunity in, learning, healing and wellbeing services.
- *Cultural prosperity* increases when communities nurture and celebrate cultural heritage and diversity, and increase intercultural tolerance, respect and harmony.

Innovations for sustainable prosperity, namely, green ways and green wares, can be broken up into other categories; for example, for ecological prosperity, we can have solar energy ways and wares, waste abolition ways and wares, and biodiversity protection ways and wares.

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Peter is a former Executive Director for the Australian Commission for the Future. He held CEO positions in a number of public sector organizations over 15 years including two associated with Environment and Planning, and one Industry and Technology department, and was also Chief of Staff of an Environment Minister in Canberra for 3 years. He is Adjunct Professor of Intergenerational Strategies at the University of Queensland , and is a Fellow of the Australian College of Educators, the Environment Institute of Australia and New Zealand ,and the Australian Institute of Management. He is an elected Member of the International Union of Associations, based in Brussels, and is an Adviser to the De Bono Institute. He has been a Senior Adviser to the United Nations system (UNDP,UNEP,UNESCO) for more than 30 years, including the 1993 Earth Summit. Peter is the author of the best selling book *Ideas for the New Millennium* (1998,2001)and *The Birth of Planetism* , to be published in late 2004

