

# Reconceptualising the Curriculum for the Knowledge Era

## Part 1: The Challenge

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## Part 1: The Challenge

Julia Atkin

### Introduction

*The sum of human knowledge and the complexity of human problems are perpetually increasing; therefore every generation must overhaul its educational methods if time is to be found for what is new.*  
Bertrand Russell (Russell, 1926:23)

At the time when Bertrand Russell was writing, around seventy years ago, debate was raging about the place of the Classics versus the Sciences in the curriculum. So it seems that there is nothing new about the challenge of reconceptualising the curriculum – what remains as complex as ever is the task of framing our educative purpose and developing a curriculum and educational practices congruent with our purpose and values.

Educational design is a complex process (Figure 1). The cornerstones for its integrity are our values and beliefs. The key to its coherence is ongoing review of the various processes. These key processes include:

- revisiting and clarifying *our values and beliefs*;
- stating our *mission* – our educative purpose;
- developing our understandings about *how* people learn; and
- being responsive to the context in determining *what* students should learn in their school learning years.

Over the past thirty years we have deepened and extended our collective understanding about the nature of human learning, about the nature and range of human intelligences and we are developing educational practices that support and enhance learning. Some of our efforts to apply these understandings about learning seem destined to be thwarted by our lack of collective clarity about our educative purpose.

Our challenge is to clearly articulate what we value as our educative purpose, what we value and believe about learning and what curriculum is an appropriate curriculum to serve our educative purpose for our current context – the context of the emerging Knowledge Era.

### Whose purpose? Political purpose versus educator's purpose

Having worked closely with many thousands of Australian educators since the early eighties I believe that the tension felt between their sense of educative purpose and the political shaping of education has the most debilitating impact on true professional growth and consequently on the development of schools as learning communities.

While education in the school age years is largely publicly funded political forces will continue to shape schooling. Can this tension between seemingly opposing forces ever be resolved? What good has come from the politicising of education? What has been detrimental? In order to reconceptualise the curriculum for the Knowledge Era, it is important to understand how have we come to be where we are in Western education, not only to value the gains that have been made, but also to understand the force\_ that might hold us where we are and prevent us from moving forward.

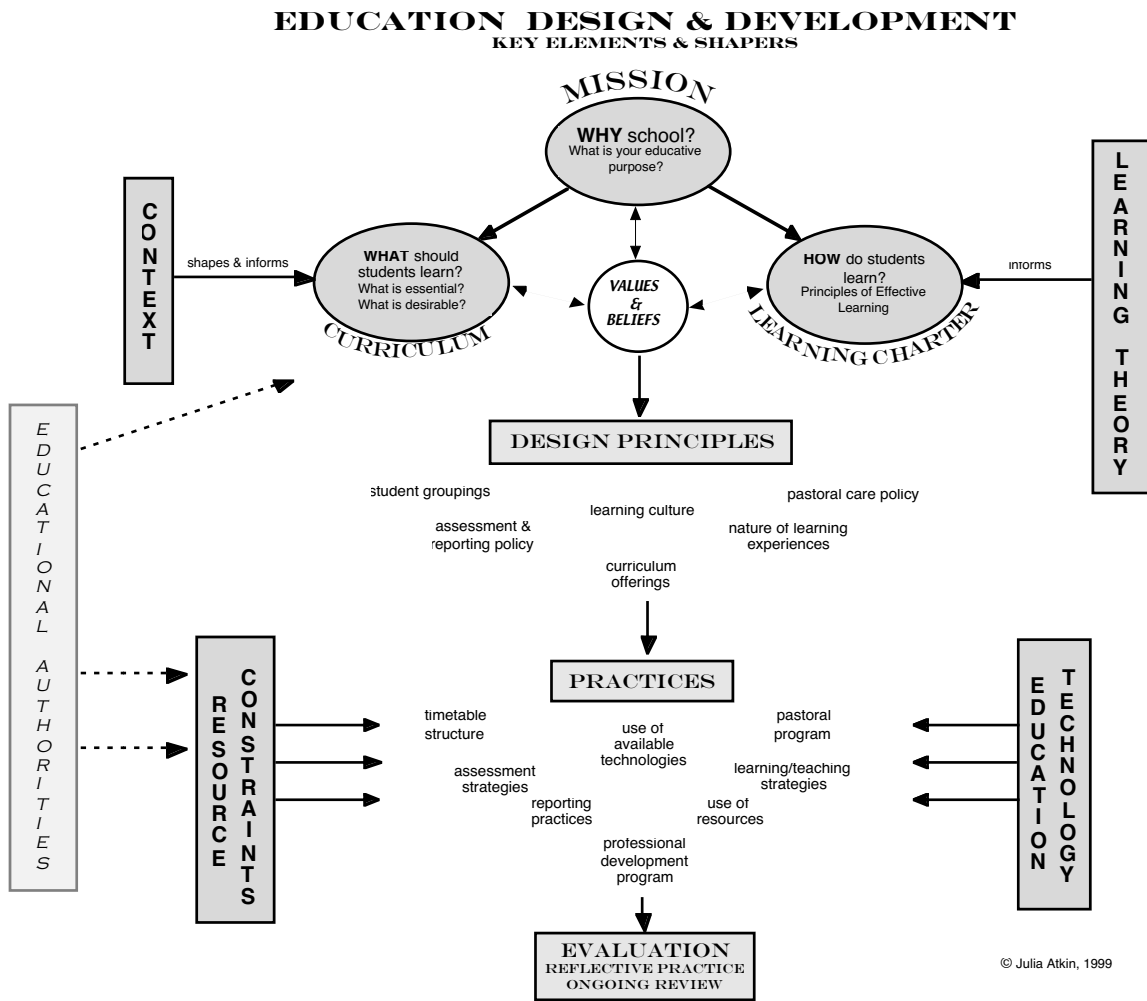


Figure 1 Elements of the Educational Design Process

## An historical perspective

From the beginning of this millennium to the end of the millennium, in the Western world, we have moved from the Agricultural Era through the Industrial Era and into the Knowledge Era.

In *The Third Millennium School: Towards a Quality Education for All Students* (Townsend, 1999:3), Tony Townsend shares a snapshot of the changing focus of education over this millenium:

*In the year 1000, whatever education that did exist was aimed specifically at the individual. Those who had the good fortune to be involved in education were being trained to be good individuals with the hope and understanding that they would be leaders within a community of uneducated peasants. One could argue that this really lasted for most of the millennium.*

*By around the 1850s, community pressure was being exerted in many countries to provide a 'universal' education. This started to occur in the second half of the last century. By the start of the 1900s, the focus of education had changed from the development of the individual to the development of whole communities.*

*. . . Now people were placed in their 'rightful' place in the community on the basis of the level of education they had obtained. This focus of education lasted for most of the century.*

*By around the 1980's, with the emerging global economy, and the technological developments that changed the face of communication, the focus shifted again, from the local to the national. Various countries distributed reports that linked the quality of education provided to students with global economic supremacy, so the focus of education moved towards one that saw education as fulfilling national goals rather than providing for either the individual student or local communities. . . . Literacy, numeracy, vocational education and technology became the buzz-words of the decade and subjects not closely linked to the economy went into decline.*

*Tony Townsend (Townsend, 1999:3)*

In focussing on the developments in Western education Bill Connell (Connell, 1980) sees the politicising of education as a major trend of the twentieth century. In the interests of social justice and equal opportunity universal primary education of the turn of the century expanded to provide facilities for universal secondary education.

*At the beginning of the century primary education was regarded as the form and level of education suitable for the mass of pupils; secondary education was for the elite. . . . The proliferation of the middle class, particularly the growth of the education-hungry salaried and professional middle-class, brought large numbers of interested pupils to secondary education. By the 1920's middle class educational expectations were beginning to be shared by many individuals in the lower classes and the great twentieth century transformation was beginning*

*. . . By the 1970s the question of whether to establish sufficient facilities for universal secondary education in developed countries was settled; the matter, however, of the most appropriate content for secondary education was not.*

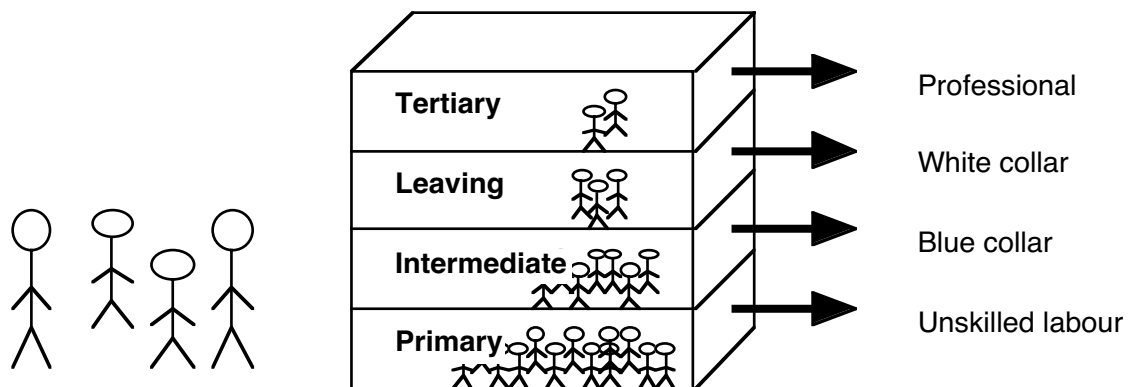
*Bill Connell (Connell, 1980:8)*

At the turn of the last century we had mass primary education which focussed on learning to read and write and become good citizens, and a

number of changes were starting to occur in secondary schooling around that time. These include the following:

- To balance the higher socio-economic class orientation of the private secondary schools, some public selective high schools came into being and pupils of high-ability were admitted.
- To select these high-ability pupils a scholarship or bursary examination was held at the end of primary school.
- Students who were not admitted to high school and whose parents could not afford to pay for private secondary education went to work and their learning continued informally on the job and in their communities.
- Students admitted to high school went through a selection process again at the end of the Intermediate. Those considered to be of high enough ability went on to study for the Leaving while those of lesser ability went out into semi-skilled 'blue collar' work.
- The Leaving Certificate acted as another filter to select those considered suitable for further academic study at the tertiary level that would then equip them for taking their place in the professions. Those not selected for tertiary study found their way into the white collar workforce.

The education system, as most of the current generation of educators have experienced it, was **designed to filter and select** – Figure 2.



Adapted from Middleton, M. *Marking Time*, 1981

**Figure 2** Education designed to filter and select

The positive outcome of this political shaping of schooling was that it broke the nexus between post-primary education and socio-economic status and eventually led to secondary education for all. The negative outcomes are some of the legacies it has left.

With its focus on selecting the most “academically able students” — as defined by performance in written exams, on subjects deemed to be appropriate preparation for tertiary study — this model of schooling has formed particular attitudes and practices on the part of teachers, students and society. How might some of these perspectives be characterised, albeit in simplified ways?

### **A teacher perspective**

Teachers tend to have a focus on “teaching” rather than “learning”, and might say/believe things like. .

- Some students can learn, others can't.
- “This student shouldn't be in my course.”
- “If a student is not learning well it's because they are not working hard enough or they are simply not bright enough.”

Subjects that did the most effective filtering job (using written exams) were accorded the highest status.

### **A student perspective**

Students might say/believe things like. . .

- “I'm no good at . . .”
- “Some are born smart, others are not and there is nothing much you can do about it”.

The most exclusive professions tend to be considered the most worthwhile, and there is an inclination to follow careers that they get the marks to get into rather than that for which they might have a sense of ‘vocation.’

### **A society perspective**

Success is publicly perceived in terms of the ability of the child or school to achieve high scores in formal assessments.

### **Practices adopted**

Some of the practices include:

- curriculum content shaped by preparation for University; requirements;
- streaming
- norm referenced assessment, ranking
- learning driven and shaped by written assessment which led to an attitude that learning was not valid nor valuable unless it could be assessed by a written examination;
- judgements of worth having to be objective and quantifiable, since assessment was used to select. This resulted in what is measurable becoming most important whereas we know quite well . . . “Not all that can be counted can be counted, and not all that can be counted counts.”
- “League” tables comparing school performance on formal assessment and equating school success with performance on public exams

As Bill Connell states:

*“. . . the requirements of examining bodies, usually external to the school, were tending to dominate school work, dictating the aims of the school and determining much of its curriculum.”*

*Bill Connell ( Connell, 1980:10)*

In the last 30 years, curriculum and educational practices have largely been redesigned in the early childhood, primary and early secondary years of schooling, and we have begun to escape the constraining legacies of the 'filter and select' model, but filtering and sorting, with a focus on University preparation, is still a very strong force shaping senior school learning and curriculum.

### **A more holistic view**

Sometimes we can see the nature of a situation more clearly and more holistically if we step outside it and look at it metaphorically. When asked to think of learning as an image or analogy people respond with a variety of metaphors that give us insight into the nature of the learning process and the impact of the learning process. Over the past ten years I have asked over 150,000 people to think of learning metaphorically. The dominant metaphors that emerge from their responses are ones of:

- journey
- growth
- construction/reconstruction – creation/re-creation
- transformation
- enlightenment/empowerment/enrichment

The nature of the learning process is one of growth, journey and construction/reconstruction. As a result of learning the person is transformed — they are more enlightened, more empowered, more enriched. When people elaborate on the "journey" metaphor, they do not see it as a simple trip between two points. Rather they see learning as a lifelong, open-ended journey. Sometimes there are signposts, while at other times you might come to a fork in the road that is not sign-posted; sometimes there are potholes in the road — travelling is bumpy; sometimes there are steep inclines, either up or down and just when you think you've reached the summit you glimpse another horizon.

Contrast this notion of 'journey' with the story of an Australian travelling through the USA. In conversation in the deep of the night on a Greyhound Bus he revealed that he had only two more States to go and he could say he'd been to every State in the Union. He had just traveled through Utah completely in the dark!

The experience of many teachers teaching in the Senior years can be likened to our Australian traveler. Many of the students are not on the trip to develop a deep understanding of the places along the way — they are motivated by finishing the trip and scoring the highest points possible. The itinerary (curriculum) is packed full, the time is limited and they perceive it is the teachers job to make sure they finish the trip. The result is that many students travel it all in the dark and end up in the dark. The focus is on finishing the trip not on the quality of the journey.

*They work to pass and not to know; alas they pass and do not know.  
Bertrand Russell*



“That’s not true for everyone!” no doubt will be the reply. No, it’s not true for everyone. Those students who learn in spite of the system journey successfully, but there are many who travel and finish in the dark. The high points gained for the trip may enable these students to use their accomplishment to take another trip but then find they themselves ill equipped to journey alone. What are the figures on the drop out rate of first year University?

Attempts in recent years to create ‘pathways’ through the senior years of schooling and into tertiary education have been a big step forward in enabling more powerful learning. But we have a long way to go develop a mind set and a curriculum that value a meaningful ‘journey’ over a ‘trip in the dark’.

The model of schooling that saw primary education as focussing on helping students learn to read, write, do arithmetic and become good citizens and secondary education as providing a preparatory pathway for a University education was developed at the end of the last century.

At that time, most of the available jobs were in unskilled or semiskilled labour. Australia was still largely living in the Agricultural Era with a rising Industrial sector. At the turn of the new century, the new millennium, we are living in the emerging Knowledge Era. Work requiring unskilled labour is disappearing, work that was once considered to be semi-skilled is now highly skilled in terms of design, materials and technology use, team work and range of skills required. All human work has a much higher knowledge component, is at a much higher level of intellectual skill and learning skill.

The new reality for learning is that all students have a right and need to become effective learners. The attitudes that have been developed by teachers, students and society over the past century have no place in a model of education designed for the Knowledge Era.

Increasingly throughout the twentieth century education has also been perceived to have a role as an instrument for implementing social policy. If a nation was lagging behind in technological progress, then more teachers were lured into teaching science and technology and science and technology was given a greater emphasis in the curriculum (as, for example, in the USA during the sputnik era).

If drugs are a problem in society then drug education should be taught in schools; if bike accidents are on the increase then bike safety should be taught in schools. More and more has been added to the school curriculum until it is bulging at the seams.

Around Australia cries to deal with the overloaded curriculum are commonly heard. The danger is that we will attempt to respond to this cry by mere pruning rather than with the fundamental reconceptualising which is actually required.

In order to reconceptualise a curriculum for the Knowledge Era we need to be clear about our agreed purpose, we need to develop a common sense of purpose, and we need to be imaginative and deliberate about both the design

of our curriculum and the educational practices that will match our purpose.

### **Defining Educative Purpose - individual professional perspective**

As an educator what is your educative purpose? Why do you teach? Not why do you teach Design and Technology nor why do you teach Maths but why do you teach young people at all? Why educate? Is your purpose simply to serve the economic or political system? Does your fundamental educative purpose transcend the particular context in which we are educating? What are your core values and beliefs as an educator?

In a previous paper (Atkin, 1996) I outlined a number of processes and activities which I use to engage individuals and groups in clarifying and articulating their values and beliefs about education. One of the processes involves people in selecting five values from a list of around forty values to represent their core values – to represent the values they hold concerning their educative purpose. It is not an easy task, for although many of our actions may be intuitively value driven, most people are not used to articulating their values. In initial discussions it is rare to get a group agreeing on the same five values but within and across different groups of educators the twelve values which have emerged most frequently are :

- self worth/self actualisation
- knowledge/insight
- responsibility
- creativity
- trust
- achievement/success
- growth
- confidence/competence
- integration/wholeness
- rights/respect
- equity
- adaptability

Many other values are seen to be important values re the means of achieving the educative purpose. For example, people value “care” as a means of achieving the more fundamental purpose of “growth”. They do not educate in order to create a caring environment – rather they see that creating a caring environment enables individuals to grow. They educate to enable an individual to grow creatively.

Writing in *The Nurture of the Human Spirit*, (Oats, 1990) Bill Oats states:

*I take education to mean the sum of all the forces which nourish the growth of the individual self. Much of what passes for education is better described as training. A child is trained to count, to spell, to read, to use a typewriter or a computer. Education, however, is concerned more with awakening the individual's response, so that each wants to learn and so that each knows what he or she wants to do with skills of reading and computing.*

*Education has suffered from the assumption that its meaning is derived from the Latin verb, educere (to lead out), whereas in fact the root Latin verb was educare, to nourish.*

*Bill Oats (Oats, 1990, p 4)*

When I reflect on the values most frequently identified by educators as fundamental to their educative purpose and on Bill Oats' writing on the meaning of education, it is small wonder to me that educators feel such tension between their own sense of educative purpose and the maneuvering of education for political and economic purposes. What they

are experiencing is the tension between an emphasis on training versus education. And it is a tension between a political driving force focused on outcomes that that are perceived to serve the economic system and the educative driving force which is focused on developing the understandings, skills and attributes which make us more fully human.

Every time we, as educators allow the political pressures on our work to have the dominant influence on what we do in schools we are selling out on our fundamental educative purpose.

### **Defining Educative Purpose - a National perspective**

In April 1999, the State, Territory and Commonwealth Ministers of Education met as the 10<sup>th</sup> Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) and finalised the Adelaide Declaration on National Goals for Schooling in the Twenty-First Century. The Adelaide Declaration outlines three broad goals, with identified sub-goals, for Australian Schooling:

1. Schooling should *develop fully the talents and capacities of all students*.
2. In terms of curriculum, students should have attained *high standards of knowledge, skills and understanding* through a comprehensive and balanced curriculum.
3. Schooling should be *socially just*.

If this is what MCEETYA publicly states as its educative purpose where is the clash of values with the individual professional's purpose?

On first reading it seems that these goals are generally congruent with the values espoused by teachers. Why the tension? The problem lies not so much in the clash of educative purpose (at least not a clash in stated purpose) but rather an inadequate set of practices to achieve what is valued and to value what is achieved.

Take a few of the sub-goals to "develop fully the talents and capacities of all students" as stated in the National Goals for Schooling.

#### **Examples of sub-goals**

- 1.1 *Have the capacity for and skills in analysis and problem solving and the ability to communicate ideas and information, to plan and organise activities and to collaborate with others.*
- 1.2 *Have qualities of self-confidence, optimism, high self-esteem, and a commitment to personal excellence as a basis for their potential life role as family, community and workforce members.*
- 1.7 *Have an understanding of , and concern for stewardship of the natural environment, and the knowledge and skills to contribute to ecologically sustainable development.*

*Adelaide Declaration on the National Goals of Schooling, April, 1999  
(emphases added)*

Then consider the recent 'rushes of blood to the head' about benchmarking and standards and the fact that the final years of schooling are still straight jacketed by being used to service the filtering and selection of students for

tertiary courses. You do not have to look far to see that, no matter what is espoused in the National Goals, what's made important by current practice at the system level, is what can be measured in formal, mostly text based assessments. And, heavens forbid, as the fervor to develop online assessment escalates, we seem to be on the verge of reducing human learning to the bits of information that can be processed by a machine.

As Eva Cox points out:

*Success in education has mostly been publicly interpreted as the ability of child or school to achieve high scores in formal assessments. Educators have often challenged this view, talking about wider definitions of success including self-esteem and skills. What I want to canvass today is the ways sociability skills and transferable trust may lead to increasing social capital and therefore more successful citizens in more civil societies. Where the structures and processes of educational institutions to actively involve stakeholders in learning the forms of trust which allows them to grow their capabilities and experience positive capacities to collaborate with others for the common good, they will create success for all. Eva Cox (Cox, 1999)*

When anyone expresses dismay at the current emphasis on benchmarking that uses only quantitative data, at the expense of more qualitative analysis, the immediate reaction by proponents of benchmarking and standards is that educators must be held accountable for outcomes achieved by students. They tend to interpret any challenge to the benchmarking and standards agenda to mean that educators do not want to be held accountable for their work. While that may be so with a few educators, it is not the case with the majority.

The majority of educators have no problem with being held accountable. As educators we have an enormous responsibility to the students we educate. In fact we want to be held accountable, but we want to be held accountable, in appropriate ways, for achieving what we say we value:

- We want to be held accountable for helping to develop the *self worth of students*;
- We want to be held accountable for developing students' sense of *'stewardship of the natural environment'*;
- We want to be held accountable for helping students develop the capacity *'to collaborate'*;
- We want to be held accountable to contribute to the development of the *full range of talents and capacities* of students.

Much as I would love to see Australia with the best educational outcomes possible, I have some concern about the validity of the assessment techniques currently used to make those judgements. So what if, as measured by limited means, we are among the top nations in Science or Literacy if we are also among the top nations in suicide rate!

Educators want to be held accountable for the full range of outcomes they hold as valuable. And they want the education systems to be held accountable for helping them achieve what they say —and the system says — is valued.

Where are the attempts at a State or National level to help schools profile and describe student outcomes against the full set of National Goals? It is not good enough to say some things we value are not tangible, or not measurable. We have to be smarter than that. Our challenge is to develop assessment practices that measure what we value.

### **Pilot and trial programs**

There are interesting pilot programs and projects under way around Australia exploring some of the possibilities. For example, the National Industry Education Forum (NIEF) is working with the Commonwealth Department, States and Territories on a manual to help teachers with explicit teaching, assessment and reporting of the (Mayer) Key Competencies.

During 1999, twenty-eight schools around Australia are trialling the draft manual, which encourages teachers to draw out the competencies that are currently implicit in their curriculum. As part of the trial, students are:

- using “mappers” to record and comment on their achievements in the Key Competencies;
- developing portfolios of evidence, together with the skills to select items according to appropriate criteria and for particular purposes; and
- learning the skills of self assessment as a central element in the process.

Examples for the portfolio are drawn not only from the school setting, but also from workplace experience and activities in the wider community, demonstrating the transferability of generic skills and their significance for lifelong learning and citizenship.

To assist with assessment and reporting of the Competencies, ACER has developed software which allows numbers of individual assessments to be translated into a single school report — using either descriptive assessment, or levels, or both. Students will leave school with two statements: one for academic achievement and the other for competencies. (Redman and McLeish, 1999). This is a start.

There are many schools around Australia who have taken it on themselves to ensure that generic skills and attributes are more explicitly embedded in the curriculum, and through explicit teaching, assessment and reporting, they are given status to match that accorded to more “academic learning”. These initiatives in developing autonomous learners (learning to learn and learning to think) have not been stimulated by system initiatives. They have generally emerged from strong internal educational leadership which was frustrated by the piecemeal and narrow system imposed agenda which they perceived had lost connection with the breadth of their educative purpose.

These schools have felt the need to clarify and articulate their values and beliefs, to state their mission — their educative purpose — and then put time and energy behind their commitment to develop educational practices that help them achieve what they value.

## Defining Educative Purpose - a global perspective

In 1996, after three years of work, The International Commission on Education for the Twenty-first Century presented its Report entitled *Learning: The Treasure Within* (also referred to as the Delors Report) to UNESCO. The Commission states:

*... education is at the heart of both personal and community development; its mission is to enable each of us, without exception, to develop all our talents to the full and to realize our creative potential, including responsibility for our own lives and achievement of personal aims.*

*Jacques Delors (Delors, 1996, p 17)*

The Commission identified four pillars for education throughout life:

- **Learning to know . . .**  
 . . . by combining a sufficiently broad general knowledge with the opportunity to work in depth on a small number of subjects. This also means learning to learn, so as to benefit from the opportunities education provides throughout life.
- **Learning to do . . .**  
 . . . in order to acquire not only an occupational skill, but also, more broadly, the competence to deal with many situations and work in teams. It also means learning to do in the context of young peoples' various social and work experiences which may be informal, as a result of the local or national context, or formal, involving courses, alternating study and work.
- **Learning to live together . . .**  
 . . . by developing an understanding of other people and an appreciation of interdependence — carrying out joint projects and learning to manage conflicts — in a spirit of respect for the values of pluralism, mutual understanding and peace.
- **Learning to be . . .**  
 . . . so as to better develop one's personality and be able to act with ever greater autonomy, judgement and personal responsibility. In that connection, education must not disregard any aspect of a person's potential: memory, reasoning, aesthetic sense, physical capacities and communication skills

The Delors Report is a powerful and timely document to encourage collaboration on reviewing and shaping education globally.

As I draw together here in this paper a glimpse of the values held by individual educators, the Adelaide Declaration on the National Goals of Schooling and the purpose of education, as articulated by the International Commission on Education for the Twenty-First Century, I cannot help but be struck by the degree of congruence between them as 'motherhood' (parenthood ?!) statements. At least in formally stated ways there is congruence between our values and educative purpose for the individual, the nation and the globe. The problems still lie in the inadequacy and inappropriateness of our practices to match our purpose.

To return to Bill Connell's commentary for a moment...

*Ambitious aims have been frustrated by imperfect instruments. Frequently, worthwhile reforms have been proposed only to founder because teachers were inadequately prepared to put them into practice or the public were not ready to accept them. Inspiration has faltered in the face of inescapable routine.*

*Bill Connell (Connell, 1980 p 6)*

## Reconceptualising the Curriculum

WHAT we think students should learn, the curriculum, is shaped not only by our mission – our educative purpose, but also by the particular context. What is the nature of the context in which we are educating at the end of the twentieth century?

Peter Ellyard (Ellyard, 1998) talks in terms of a Planetist future in which

*. . . transformed and growing individuals and communities can position themselves for success in a world of rapid change, and they can create and market the ways and ware both to create and benefit from the development of a Planetist future. The key to success is, therefore, learning. If our society is one which maximises learning with every step into the future, the chance of future success will be greatly enhanced. Thus the development of a new culture of learning is necessary for success in the twenty-first century.*

*Peter Ellyard (Ellyard, 1998, p 59 )*

As knowledge, knowledge creation and knowledge sharing become the key assets in a knowledge based economy, as advances in information and communications technology enable efficient storage of information and rapid access to abundant information and, as advances in technology are continually changing the nature of human work, **lifelong learning** becomes the key to individual and collective economic prosperity.

The emerging learning culture has a number of features:

- lifelong learning
- learner driven learning
- customised learning
- collaborative learning
- contextual learning
- learning to learn
- transformative learning
- just in time learning

As I observe the endeavours of schools around Australia who are engaged in thoughtful and imaginative review of their values & beliefs, their mission and how to develop their practice to achieve what they say they value and believe, there is considerable evidence to support the development and emergence of the first seven of the eight elements listed above. What seems to remain a stumbling block is the last element – 'just in time' learning or a 'just in time' curriculum.

What does the term 'just in time' learning mean and is it an appropriate concept for the school years of learning? The term is borrowed from the manufacturing and retail sectors. Recognising that stockpiling large quantities of raw materials and components meant that capital sat idle,

enterprises developed ways of operating which obtained what was needed 'just in time' for production.

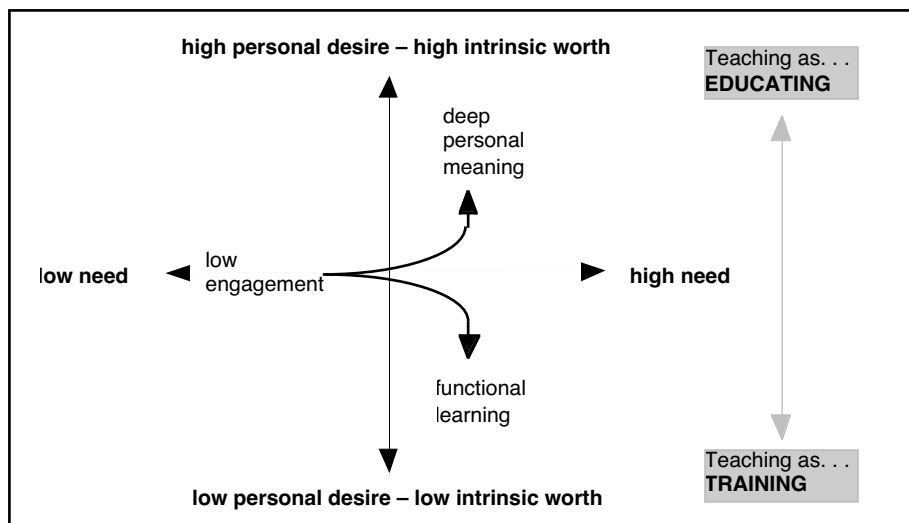
As educators we know that the most powerful learning, the most powerful teaching happens at the point of need. Yet much of the secondary school curriculum could still be described as 'just in case'. Much of what is learned in a particular subject in the later years of secondary school is learned 'just in case' students go on to further study in the subject at University.

What seems to dictate what is learned is not what learning will help us achieve our core values; it is not what learning is foundational to enable lifelong learning; it is not even what learning will equip students for independent learning at a tertiary level but rather, it is what learning will gain the highest marks on externally devised assessment tasks. The ripple effect is felt from Year 12 well down into the early middle school years.

Due to the use of externally devised curriculum and assessment which are used to determine who does or doesn't get access to limited tertiary places, many teachers and students seem fixated on what has to be 'covered' rather than what has to be discovered or uncovered. Student learning becomes 'functional' rather than 'transformative' and the 'does it count mentality' takes hold; teachers' purpose becomes focussed on the short-term responsibility of helping students jump through the required hoops successfully. It is the rare and highly skilled teacher who is able to engender deep meaningful learning in a climate focussed on achieving on externally devised, predominantly written, assessment tasks.

Let me expand on what I see as the impact of the 'does it count mentality' on the nature and quality of human learning. In Figure 3 I have drawn out two intersecting dimensions for motivation and I have mapped out the nature of learning which emerges as a result.

### The impact of aspects of motivation on the nature of learning



Adapted from discussions with participants in the 'Principles of Effective Learning & Teaching Workshop' Apple Innovative Technology Schools Conference, Wollongong, 1998

Figure 3 The impact of aspects of motivation on the nature of learning



In the vertical dimension I have drawn out the continuum for motivation from *low personal desire – low intrinsic worth* to *high personal desire – high intrinsic worth* and in the horizontal dimension the continuum from *low need* to *high need*.

When what is being learned is motivated from within, or when it is perceived to have high intrinsic worth, and there is a felt need to learn, the learning which occurs will have deep personal meaning and the learner is transformed. When learning is motivated externally, when it is perceived to have little intrinsic or personal worth, but there is a high felt need to learn, the learning that occurs tends towards purely functional learning. It does not hold deep personal meaning and it does not transform the learner. Usually when whatever created the felt need for the learning is removed the learning is quickly forgotten. It served the purpose for the time being.

*Teaching as educating* aspires to create learning experiences that transform. *Teaching as training* is satisfied when, like dogs in a circus, the learners can jump through hoops.

Many senior students select subjects, not because of their intrinsic worth nor personal desire to learn but rather because it is the particular 'hoop' designated by the selection system as being of the most worth. Getting high marks in the subject gets them where they want to go and hence the 'does it count mentality'. It is an indication of the weakness of our current assessment techniques that students perceive that high marks can be obtained by having the right information rather than deep understanding.

It is no surprise that our greatest advancements in developing educational practices that are congruent with what we say we value have happened, and are creeping up from the early childhood years, through the primary years and are now influencing the middle years of schooling. Having recognised the low degree of engagement of many learners in the middle school years and the consequent alienation from schooling we are at last attempting to rectify this with a strong middle years of schooling movement that has articulated principles of effective learning and is actively supporting the enactment of these principles in congruent educational practices.

Ten years ago it may have been possible to claim that the lack of meaningful learning in schools was due to an inadequate pedagogy. Although there are no doubt still some teachers who lack an adequate pedagogy my sense is that a pedagogy quite capable of developing meaningful learning for all has been developed by the combined efforts of many educators and educational researchers over the past twenty years. What stops a lot of teachers embracing this pedagogy is their fear that it will not enable students to 'hoop jump' so well. Teachers are under enormous pressure from society and the system to develop good 'hoop jumpers'. Until we can bring equal pressure to bear to achieve all the outcomes we say we value the powerful pedagogy developed in recent years will struggle to blossom.

The task of freeing the senior years from the narrow purpose of acting as a filtering and sorting device remains our biggest challenge.

### What of recent attempts to define what students should learn?

My concern with the initial development of the National Curriculum Frameworks and the subsequent development of Standards Frameworks in various states is that, in the main, the process has simply involved a mapping of what is (albeit with some slight pruning here and there) rather than a visioning of what is desirable and possible. I have nothing against Curriculum Frameworks per se. It is critically important that we have a framework of reference for desirable learning outcomes. I believe the major challenge we face in education is to reconceptualise, to redefine a curriculum for the compulsory years of schooling which is deliberately designed to address *all* that we say we value and believe to be our educative purpose and to emphasise foundational learning for lifelong learning.

The challenge is to identify what is *foundational*. What are the powerful ideas and processes captured in human wisdom that form the basis for, and enabling lifelong learning? It is easy to slip into our old notion of the basics, our old notion of the core skills. What were basic or core skills fifty years ago are hardly what are foundational skills today. What it meant to be literate fifty years ago would not suffice to be 'literate' today.

Throughout this paper I have attempted to articulate the challenges we currently face in designing education for the Knowledge Era. As I perceive them. The challenges are:

- to define a curriculum for the compulsory school years that is foundational for lifelong learning;
- to design a curriculum that is freed from the shackles imposed by the use of schools as a filtering and sorting device for limited tertiary places;
- to design and develop assessment practices which measure what we value rather than value what we can currently measure;
- to continue to develop educational practices for transformative learning.

There are already many attempts, at the grass roots level, being made to respond to these challenges. In Part 2 of this paper – Responding to the Challenge – I will address the practicalities of moving from reconceptualisation to improving practice.

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