

Wild erratic fancy?

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Schooling links the future and the past. The schooling process must conserve the values and knowledge of our society while ensuring that society is transformed. This paradox puts particular strains on all who work in the sector – including officials and teachers. Over the last decade Ministers of Education have collaborated to ensure schooling in Australia and New Zealand can, like other parts of both the public and private sectors, take advantage of the capacity of information communication technologies to drive change. Are we making progress? Do we have too much change or too little? Are we caught in 'the round eternal of the cashbook and the journal' at the expense of 'the vision splendid'?

Introduction

In this paper I want to consider three things; an Australian educator's *vision splendid* in the context of A. B. Paterson's poem from which that phrase derives; the last decade's ICTs in schools policy achievement in light of that vision: and the next steps we need to take towards our *vision splendid*.

Paterson's *Vision Splendid*

Conservative politicians and commentators educated in the fifties and sixties might make much of the fact that a group of educational leaders in Australia in 2006 can draw on their common schooling heritage to use a conference title from Banjo Paterson's poem, *Clancy of the Overflow*. Were there such a politician or commentator I imagine he or she might speculate on whether such common understanding will be possible in ten or twenty year's time.

Since, although educated in the fifties and sixties, I am an educator, I am not sure our understanding **is** so common even though the phrase is so familiar. The conference draws on our common cultural understanding but has forced me, at least, to examine some of the underpinning assumptions of Paterson's poem and to juxtapose these with our challenge as educators in the twenty-first century.

I can still recite the poem. This is not because I learned to do so at school although it was part of my schooling and I did recite it at school. I learned to recite it at the age of about 8 or 9, while helping my mother to learn it by heart. My mother at that time was a 'housewife' and every Wednesday afternoon she went to the Home League, a women's group run by the Salvation Army. Part of their two-hour meeting was a segment where members took it in turn to perform something, a song, a poem, a comedy routine, a skit. My mother usually recited a poem. It was always Henry Lawson or Banjo Paterson and she gave it all she had. In the week before her turn, my brother and I would help her learn the chosen poem by heart. We can still recite the repertoire.

My mother, the youngest child in a migrant family, was the only one of her family to be educated in Australia. She left school at 14, against her own wishes, able to read and write fluently and with a strong sense of belonging and interest in her adopted country's culture. She carried this with

her as an adult and when, twelve years after she had left school, I, her eldest child, entered a primary school one mile away from hers, there was a harmony between her schooling, my school and our local community life.

She was a child of the city and had no opportunities to see *the sunlit plains extended*, but she would have identified them immediately with *the vision splendid* and her daughter is incapable of talking about that phrase without conjuring up *the wondrous glory of the everlasting stars*.

Nevertheless, even as it moved me, Paterson's *vision splendid* always worried me. It is premised on a contrast of the humdrum routine and proscribed landscape of most of our lives with the 'other'. Like the European romantic poets, Paterson's ideal is associated with the country, nature, the seasons and the universe. Offices, cities, crowds (and, we could assume, the technologies they dabble in) have no part in the vision but, in contrast, are associated with petty mindedness, dirt, poverty and dullness.

Because our society and schooling in the fifties and sixties was still influenced by the Romantic Movement and the cultural assumptions of both Europe and nineteenth century Australia, it is easy for educators to be drawn into this contrast between an ideal and a humdrum reality. We eventually settle into the daily reality of paperwork, timetables, disinterest, regulations, tests, marking, disadvantage and compromise – the modern schooling sector equivalent of *the foetid air and gritty of the dusty dirty city which spreads its foulness over all* - while comforting ourselves that somewhere there is an educational Clancy, free to ride among the children singing.

A vision founded on such contrast is impotent. Even as a child, I knew the poet was not going to give up *the round eternal of the cash book and the journal* in order to go *a droving 'down the Cooper'*. Paterson's *vision splendid* is a pipe dream. If these are the two alternatives, we are condemned to live our lives in the humdrum, wistfully and comfortably dreaming of what might have been.

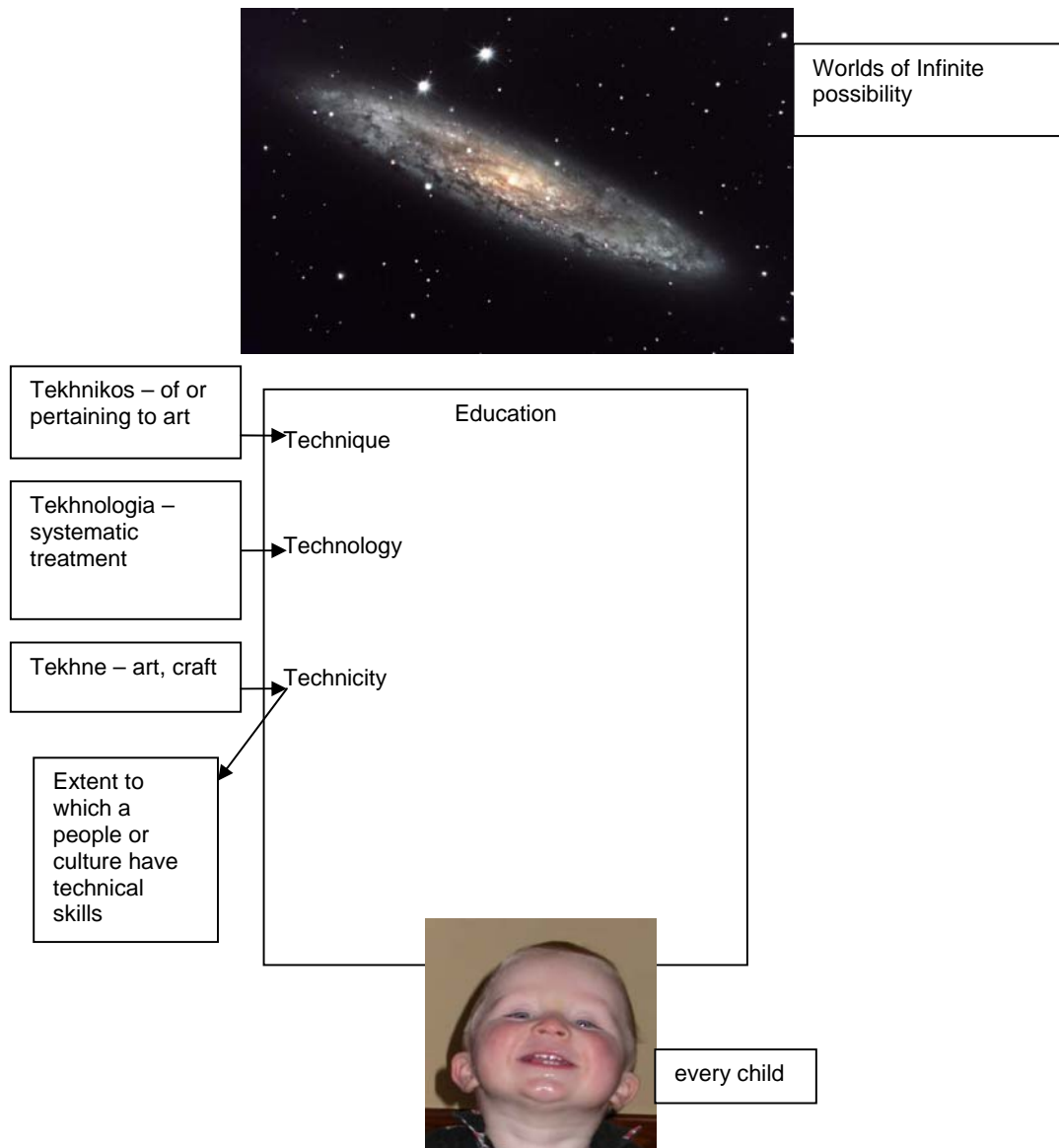
An Educator's *Vision Splendid*

An educator's love is otherwise. The capacity for change is what drew me to education and it's what led me to, and keeps me pursuing, technological applications within education.

The wondrous glory of the everlasting stars, the wonder that is universal, endless, yet-to-be-known and eternal, is explorable, penetrable, increasingly knowable from the city and town as well as on the plains and in the most remote outpost; in the most ordinary of lives as well as the extraordinary. An educator's vision is of making accessible and knowable worlds of infinite possibility, internal or external to ourselves, and of creating still more.

Education is not the mechanism of acceptance, for maintaining things as they are, but the driver of new solutions, of ways forward, the sustainer of a democratic, growing community, creative enough to find new solutions, to find ways forward. The educator's vision is of planned human agency connecting us to infinite possibility. It is premised on human development, on the possibility of *all* humans experiencing and growing to understand more than previous generations about *the wondrous glory of the everlasting stars*. Because we are fundamentally committed to human development, endeavour and to improving access and understanding for all humans, we are inevitably technologists.

A brief examination of the Greek roots of our language in relation to technology helps. The root word *tekhnē* meant 'craft' or 'art', and *tekhnikos* 'of or pertaining to craft', while *tekhnologia* was the term for 'systematic treatment'. An educator is one who applies systematic treatment to the craft of understanding. Propagandists and indoctrinators ply the craft of particular positions and views, but educators are technologists of the space between the individual human, or communities of humans, and knowledge. We might even think of it as a new way of framing distance education, reducing the distance between the individual (and society) and the possible.



As educators, we not only see the world of infinite possibilities, stretching beyond the horizon of the *sunlit plains extended* and throughout the universe of *the everlasting stars* but our vision is of the child connected to these possibilities whether the child is of the gutter or the sunlit plains. Between the child and infinite possibility is the space in which educators ply our trade, our *tekhnē* or technology. We bring *tekhnologia* –systematic treatment – to the continuous task of ensuring every child in our society can experience and engage with those infinite possibilities. As well as knowledge and understanding of possibilities, we want students to have technicity – the skill to engage with those possibilities and to take us beyond what we already know and can do.

We are sceptics: our training should require us to check the evidence. We are, however, also open to the possible. We know there is more to be known. We hope our students will surpass our own knowledge and capability. How can we not, therefore, be committed to technology? More particularly, in a business grounded in knowledge and communication, where can we go to escape commitment to information and communication technologies?

Our skill or craft is preparing both individuals and the community to venture into the unknown, to make sense of it, to make more of it known, both to the individual and to society, and to expand what is possible. You might describe the activity that happens in this space as teaching, or teaching and learning, or as pedagogy. All these terms are, however 'technical' terms, describing the systematic, specialist way that transformation takes place. Like it or not, we are the technologists of that space.

Because information and communication is fundamental to our business, a means by which we traverse and shrink the space between our students and the world of possibilities, information and communications technologies are not optional.

I think our community shares this view of education, the vision for making progress to greater understanding, for creating more possibilities. Not many sections of our society see the picture as broadly as we do. That need not be a problem, provided educators are fully engaged in the debates and are providing their expertise and leadership.

A Decade of ICTs in Schooling: Building Knowledge Economies

In the national, and for the most part, international, policy arena the application of ICT to education has been associated with the building of information or knowledge economies. ICT use has been part of an argument for human resource development: the 'new' world needs people who can apply, use, adapt, adopt, expand and generate knowledge to fuel future society. The OECD and UNESCO have taken this position and it has been the rationale for ICT use in a wide range of countries, including Australia and New Zealand. We may find the emphasis on economy and human resources limiting and distasteful and may wish to broaden that focus, but is an inevitable part of the business of linking each child to the world of possibilities and developing our future society.

In this context, education ministers in Australia and New Zealand have worked together over the last decade to stimulate educational change using ICT. Their collaboration is based on the belief that schooling is the means of powering our future economy and society and that the future is one based on knowledge generation and application. They have agreed on and published a coherent set of policies, strategies and action plans for schooling based on these assumptions.

Infrastructure, People, Content and Policy

Ministers published an overarching directional document, *Learning in an Online World* in 2000. In it, Ministers articulated their agreement that in order to support a society based around an information economy, education would need to develop new infrastructure, people capacity, digital content, policies and regulations. As a kick-start, they agreed to develop collectively a substantial body of digital content. This was seen to be achievable – a way of getting going, having something to show to teachers, to motivate them to change and also as a practical way of creating a ripple effect. It would create the need for other change, expose areas that didn't work in the new world and open up further opportunities.

Infrastructure

The provision of infrastructure - bandwidth, networks and equipment - has largely remained the responsibility of states, territories and sectors. Some collective work has been undertaken, for example the Bandwidth Action Planⁱⁱⁱ and joint negotiations with large supply companies. Australia, however, has not followed the example of the USA of using a community service obligation to require telecommunications companies to provide an 'e-rate' to schools, nor strategies of countries such as Singapore or South Korea to improve bandwidth to schools. As a result, there are wide variations in infrastructure levels across Australia.

People

Building the capacity of teachers in relation to the application of ICTs to learning has also been a responsibility of individual states, territories and jurisdictions. It is the hardest area on which to achieve national consistency or joint national work.

Requirements for teachers to undertake professional development in relation to ICTs in schools vary from jurisdiction to jurisdiction. Most have required some training in basic computer software – word-processing, spreadsheets and databases. Promotion frequently requires proficiency in ICTs. Teacher preparation programs rarely require proficiency in the use of ICTs. Expectations rarely stretch beyond general program competence to educational application competence. While there are many proficient teachers, proficiency is far from universal and rarely a requirement.

The establishment of Teaching Australia holds out promise that collaborative and nationally consistent work might be hammered out in this area.

Content

The content work was structured around a flagship initiative, The Learning Federation, funded jointly by ministers to help drive change. Focused on digital content, it structured collaboration to reach agreements on underpinning ‘railway gauge’ issues: interoperability, standards, IP sharing, indexing and searching, curriculum consistency, while opening new possibilities in curriculum design and concept development. It has been a risky, rocky road but has paid dividends.

It exposed the need for learning management software, teacher capacity building and better bandwidth provision. This exposure is an achievement and a credit to the courage of Ministers and the vision of education CEOs who knew the Initiative would expose weaknesses but who also understood we needed them exposed in order to advance.

While maintaining their autonomy and distinctions, state systems and the non-government sector have been able to identify what they agree on, what they need to agree on, what they hold in common, what they need to hold in common and what they might share in order to serve their client base and incidentally, to maintain their difference. The collective nature of The Learning Federation has mitigated the risk for individual jurisdictions associated with leading edge R&D and the massive changes likely to spring from serious ICT application.

There is strong support for The Learning Federation content from the students, teachers and parents using it^{iv} and early evidence of educational efficacy^v. The Initiative is user and evidence based and will continue to publish the results over the next three years of its third phase. There is no problem with those who have taken the plunge; gone, if you like, ‘a *droving* ‘down the Cooper’.

Policy and Strategy

To deal with the large ICT-related change issues being identified through The Learning Federation, the Ministers’ ICT in Schools Taskforce took on a serious, heavy and formal process to develop and reach agreement on policies, strategies and action plans relating to the framework outlined in *Learning in an online world*. Through this taskforce, Ministers published a series of documents^{vi}, each building on the other, each based on a growing body of research and the increasing capacity of Australian and New Zealand jurisdictions to collaborate and hammer out agreements, thereby generating a cycle of change. The work that went into agreement on these documents has been hard, significant and unsung work to improve our capacity to provide every child with deeper, faster access to worlds of infinite possibility. The documents recording these agreements are available to all^{vii} and many are in use in schools as well as systems and sectors.

Not only have these documents proved of practical use to hundreds of our worksites, but they also place us within a global schooling community moving in a similar direction. Other countries have tackled different parts of the picture in a different order to us – the Republic of Korea for example, used early bandwidth provision as a lever, Canada used cyberschools, Singapore prescribed a timetable for proportions of digital instead of non-digital content use, the UK

government provided choices for schools on a broad front of programs including technical infrastructure, policy incentives, curriculum content and equipment.

The elements are very similar and they all address the supply side of schooling.

In Practice

At this conference, you will have viewed, discussed, discovered and shared many good practice applications of technologies. Many schools embed ICT in practice. Teachers are using software packages in all subject areas and probably for every aspect of learning. Schools are beginning to use digital content and many are using it to great advantage. We have data management systems providing more accurate, timely, specifically targeted information to teachers, parents, principals and schools. Teachers also participate in web-quests, use gaming technologies, discussion groups, pod casting, wiki's, blogs and many other applications. In the terms of Paterson, there are many of us *a droving 'down the Cooper'*, riding among the children singing, in touch with the *vision splendid*.

For some teachers and schools however, these are peripheral activities involving take-it-or-leave-it tools. They are not yet used naturally and ubiquitously to educate each student. For one reason or another, many teachers have not yet found *time to grow*. Students, however, are using the tools anyway. Students are already operating on the demand side.

In spite of our achievements, we are in danger of a vision of contrasts where ICT use to improve and accelerate student learning is a *vision splendid* on Paterson's terms rather than on educators' terms – a good idea for someone else rather than part of our *tekhne*.

We need to address two issues.

Yes, but...

We have exposed some deep reluctance in many educators, whether in schools, universities or systems – to move towards the possible. Like our poet, many are secure within their habitual environment, even though they see that environment as impoverished. There are insufficient incentives or mandates for change in a profession with a deeply entrenched culture of resistance.

Distribution and Access

Although we are procuring content collaboratively and nationally and delivering it electronically to jurisdictions, the 'last leg' of delivery is a state and territory or sector responsibility. We now know the challenge and cost of that 'last leg' to schools. Solutions for distribution and access vary considerably across the country and we could not say we have the bandwidth or the networks to reach, reliably and seamlessly, every student. We have patches and work-arounds in many places but fall short of our vision. No one, however, is denying the need to find the solution and to do the work, nor the benefits of so doing.

Progress Summary

We are all benefiting by the 'standard gauge' interoperability across the sector that we hammered out before we could develop content once and use it in many different places. Interoperability has affected not just curriculum content, but human resource management systems, financial systems, student management systems. The standards are international, so we can work seamlessly across countries and across the higher education and vocational education sectors. These agreements and standards open the possibility for us to move away from a cottage industry model of schooling to a knowledge industry model – if we have the will and the courage.

So an Australian and New Zealand report card would say we have made progress. We can point to some very good practice in ICT integration into teaching and learning processes and into the

organisation of schooling. We understand the necessity of connectivity, support and ubiquitous infrastructure. While it is important to acknowledge the frustration and limitation that continues, we will solve those problems. We know now we can improve student motivation through the application of ICTs. We can improve concentration. Evidence is building for improved and accelerated learning.

The issue for schooling is whether we bend our will and apply our expertise to morph from a cottage industry into a knowledge industry.

My Wild Erratic Fancy

The next set of gains will come from integration and networks. We can create supply chains and value chains that link not just the tools we currently have or can imagine, but link and transmit the knowledge and learning of teachers, students and others. Supply chains activate horizontal collaboration to create value that did not exist before. Businesses such as Amazon.com and e-Bay use collaboration between suppliers of goods, transport companies, banking services and credit card companies to provide services that did not exist before. There is a very elemental supply chain example in schools that link the annual taking of photos of students for parents to purchase to the provision of security cards and ID. There are, however, many more significant opportunities both in the record keeping, administrative, security, maintenance side of schooling services and in the curriculum, student support and teacher knowledge sides.

Not only could we create, for example, a cumulative, edited record of a student from enrolment to the end of life-long learning but we could also record and build on teacher understanding and action in relation to individual students or learning processes in a cumulative fashion. We could automate links to a range of counseling, health, vocational, business and leisure services to build partnerships that improve delivery and free teachers to focus on the design and management of student learning and the building of relationships.

We can unpack the rigid time divisions between home, school and after-school activity and build links in our supply and value chains between public and private schooling. These might help us to redefine what we mean by public education. If content procurement, once the preserve of each state education system, can be more effectively and efficiently done in a coalition, allowing systems to refocus their efforts, what other functions might be achieved this way, or outsourced at a sector, system, school, region or teacher level?

The UK's GCE examinations are now set, marked and results published by three companies. Schools, even subject department heads within schools, can choose which company they use. At the moment, students handwrite traditional scripts that are scanned en masse and sent electronically to online markers. The scripts arrive already annotated in relation to acceptable variations within each question. Markers have their questions answered online and the consistency of their marking is monitored and benchmarked against other markers through common scripts - all in real time. Reliability of marking is improved. A range of people mark, from highly experienced teachers required for analytical essays or imaginative writing to graduates and students trained explicitly in the topic of particular short answer questions. Markers can be anywhere. In 2004, 20 000 GCE scripts were marked in Melbourne. In 2005, students were able to view their marked scripts online after the marks were released. This is happening before the exams themselves have moved online.

The digital world's advantage is its capacity for unpacking and repacking, reassembly, recombination, lining up things not lined up before, tracking and intervening, moving from one medium to another, stimulating reuse and new use. In the process, old equipment, applications and some media get shed, but a lot more are generated.

What we have not done is to demand, create and stimulate a coherent network of ICT-enabled service connections throughout our space. The comment^{viii} that we need CIOs, but as Chief Integration Officers rather than Chief Information Officers is close to the mark. From the stance of

2006, our break-through work of the last 10 years appears two-dimensional. We now need a third, interconnecting dimension. It is through this third dimension that we will stimulate demand.

We could now use ICTs, to:

- minimize the hit and miss schooling experience of each child
 - the digital world is not a world of generalized cohorts and classes moving through forward like armies but an individual-oriented world, that attracts both alike and complementary forces
- build partnerships, networks, 'supply chains' of services that focus teachers' work on the 'technology' of teaching, the hard, analytical work of identifying or addressing a student's learning need
 - in addition to those in traditional subject expertise, partnerships or expertise from neurology, psychology, sports medicine, linguistics, ethics and design, for example, could become routine and productive
- capture, share and build on the knowledge accumulating about every student as they progress, stall or regress – parent knowledge, student knowledge, expert knowledge from a range of disciplines
 - applications are available to link user understandings with provider understandings
- close the loop between curriculum, program, resource use, methodology, assessment, analysis, improvement, adaptation, program
 - the professional process of using data to improve teaching and improve learning could be available to every teacher
- administrative systems improvement
 - security, finance, enrolment, attendance, entitlements, performance records can all be tracked and linked for immediate local use.

In case by 'system' in this context I conjure up an image of bureaucracy, I refer to Thomas Friedman's *The World is Flat*^{ix} which talks about the forces, all ICT-enabled, that shrink our world for the purpose of interaction and remove whole layers of intermediaries, creating new, more direct links and natural partnerships. We might also ponder the ABC Four Corners program, *Killed by care*^x broadcast on 3 July 2006 which told the story of doctors in large Canadian hospitals improving health services by admitting, articulating, discussing and analysing mistakes and building new procedures based on the resulting data analysis. The next steps in educational improvement through ICT are not bureaucratic but entrepreneurial and will be created by demand rather than supply-side reform.

We need to build the networked infrastructure, make the digital data and service links. It is a future in which flexible, skilled teachers and small groups of service providers have an advantage and the opportunity to navigate in creative ways. Those who can identify the need, design and package programs and services for one child, or a group of children, not necessarily geographically linked, will be in demand. Schooling systems as we have known them might use their capacity to advantage but they may also prove too rigid, too slow to understand and too cumbersome to adapt quickly enough. The advantage might yet go to the small, even to the individual and will undoubtedly create new models and new services. If the child is the organising focus of the digital world, the teacher is the premium resource in the space linking that child to the world of possibilities.

What a state or system or school does and what it is responsible for may not be the same thing. How do we guarantee the best supply of teachers, service or content? How do we ensure

buildings are replaced and renovated or ensure an infrastructure of tools, computers, systems, people and opportunity?

What a teacher does and what she is responsible for may not be the same thing. How do we ensure students maximise their learning? How do we understand the best route for a student to take, then design and provide the best supports and experiences for that route? What tasks and routines can we shed or delegate to others in order to expand as navigators?

We – whether as individuals, as a profession, an education system or a sector - now need to use the ICT infrastructure and experience we have built to advance our tekhnologia – the systematic treatment of our core professional task to connect every student to infinite possibilities.

It doesn't have to be like this

In a recent article for EQ I wrote about the image in *2001 A Space Odyssey* of the ape-man discovering the bone tool which not only enables him to be more effective in his world, but which, flung through the air, morphs into a space ship. The tool changes everything, makes the unimaginable possible. In education, that ICT bone is in the air.

In 1986, as a member of the Equal Opportunity Unit of the South Australian Education Department, with Margaret Wallace, I conducted an enquiry into what women wanted from schools and schooling. We visited schools and regional offices all over the state and talked to students, mothers, teachers, administrators. One response sticks in my mind and captured the essence of what women were saying. It came from a mother in a primary school in Adelaide's northern suburbs. She was in her mid-twenties, from a family of ten children and with two children of her own. In order to survive, her mother provided for each of her children until they were 15. On their fifteenth birthday each had to move out of home and find their own way, which meant, of course, leaving school. Life was tough and options limited. She told us how important school had been to her. From school she learned 'that it doesn't have to be like this' and she carried that message as a light in a dark world. She learned about possibilities –in the world, in herself and for her children.

ICT has been a core driver of some educational possibilities, and a core facilitator. ICT has led to the ready production, storage and re-packaging of data, making a lot more possible, blowing away barriers and excuses. It is ICT that our students use to check what we claim, to collaborate on their homework, to complain to a parent, to gather and process raw data, to check results from one school to another. They are open to the world of digital possibilities with or without us. They are navigators of the digital world and their demand will – and should – contribute to change and improvement in education.

We have kept the vision of access to worlds of infinite possibility alive for our clients – and now we have to do it for ourselves. We know from our use of ICTs in education to date that schooling does not have to be like this. We do not have to position ourselves to choose between *the office* or *a droving 'down the Cooper'*. The bone is in the air, by using it, adapting it, demanding more of its journey; we help to shape the education spaceship of the future, navigating its journey to worlds of infinite possibility. Without that engagement, we choose for ourselves *the cashbook and the journal* and the world will find its way to the stars – or not - without us.

References and Endnotes

ⁱ CLANCY OF THE OVERFLOW - A.B. "Banjo" Paterson

I had written him a letter which I had, for want of better
Knowledge, sent to where I met him down the Lachlan, years ago,
He was shearing when I knew him, so I sent the letter to him,
Just "on spec", addressed as follows: "Clancy, of The Overflow".

And an answer came directed in a writing unexpected,
(And I think the same was written in a thumbnail dipped in tar)
'Twas his shearing mate who wrote it, and verbatim I will quote it:
"Clancy's gone to Queensland droving, and we don't know where he are."

In my wild erratic fancy visions come to me of Clancy
Gone a-droving "down the Cooper" where the western drovers go;
As the stock are slowly stringing, Clancy rides behind them singing,
For the drover's life has pleasures that the townsfolk never know.

And the bush hath friends to meet him, and their kindly voices greet him
In the murmur of the breezes and the river on its bars,
And he sees the vision splendid of the sunlit plains extended,
And at night the wondrous glory of the everlasting stars.

I am sitting in my dingy little office, where a stingy
Ray of sunlight struggles feebly down between the houses tall,
And the foetid air and gritty of the dusty, dirty city
Through the open window floating, spreads its foulness over all.

And in place of lowing cattle, I can hear the fiendish rattle
Of the tramways and the buses making hurry down the street,
And the language uninviting of the gutter children fighting,
Comes fitfully and faintly through the ceaseless tramp of feet.

And the hurrying people daunt me, and their pallid faces haunt me
As they shoulder one another in their rush and nervous haste,
With their eager eyes and greedy, and their stunted forms and weedy,
For townsfolk have no time to grow, they have no time to waste.

And I somehow fancy that I'd like to change with Clancy,
Like to take a turn at droving where the seasons come and go,
While he faced the round eternal of the cashbook and the journal -
But I doubt he'd suit the office, Clancy, of "The Overflow".

The Bulletin, 21 December 1889

ⁱⁱ Photo of stars: Ngc583 www.webshots.com/jonc97

ⁱⁱⁱ See note vi below.

^{iv} *Evaluation of The Learning Federation 2001-2006 against its original targets*, TFG International 2006, available at www.thelearningfederation.edu.au

^v Field study reports of Professor Peter Freebody, available at www.thelearningfederation.edu.au.

^{vi} In June 2006 MCEETYA ICT in Schools Taskforce publications in the *Learning in an online world* series include:

Contemporary Learning - Learning in an Online World 2005

Content Specifications Framework 2006

Leadership Strategy: Learning in an online world 2006

Pedagogy Strategy: Learning in an online world. 2005

Content Strategy: Learning in an online world 2004

Bandwidth Action Plan: Learning in an Online World 2003

Bandwidth Implementation Plan 2004-05

Learning Architecture Framework: Learning in an online world 2003
Research Strategy: Learning in an online world 2003
Monitoring and reporting strategy: Learning in an online world and *Learning Spaces Framework: Learning in an online world* are scheduled for 2007.

vii <http://icttaskforce.edna.edu.au/icttaskforce/>

viii Jeff Wacker, futurist for Electronic Data Systems Corporation, quoted by Thomas Friedman *The World is Flat*, Camberwell, Victoria, Penguin, 2006 p 284.

ix Ibid.

x <http://www.abc.net.au/4corners/content/2006/s1674541.htm>