FAIRYTALES IN ICT: A CAUTIONARY TALE

M. ROBERTSON¹, V. CARRINGTON², S. DOLE¹

¹. Faculty of Education, University of Tasmania
². Graduate School of Education, The University of Queensland

Abstract

In an adult, post-tertiary version of stories around a campfire, we listen to a storyteller weave a wondrous and shiny reality for us as we sip coffee in a trendy coffee spot. It’s a story of vision, adventures and risk-taking, of globalization and of computer technology. Globalization, we are told, is a wonderful process which makes the world more accessible, where net-based communities will erode the barriers to learning and build partnerships to knowledge through establishment of learning communities. We need only embrace this vision. Fuelled by this glorious fairy tale, we set out to enter this shiny new world. We wrote a small campside story of our own, and secured funding to set us on the trail of this liberated world. Each of us has a story to tell of the ensuing development within our respective disciplines. The reality is new tensions created by competing demands on our time to meet the new expectations, infrastructure limitations and the perennial worry of academics to maintain research productivity as well as teaching excellence. Our individual stories form part of this paper. Each is a tale of some success - even elation, much frustration and some measured cynicism in the fairytale. We want to believe in the fairytale but at what cost?
**The postmodern world**

The postmodern world is founded on information—information as an object of exchange and value. A growing network of computer connections supports the growing information economy, forming the base of a globalized world economic system. While, as Robertson (1992) quite rightly pointed out, the history of capitalism is also the history of globalization, the emergence of electronically-mediated information technology has been the catalyst that sets this period of globalization apart (Castells, 1996; 1997; 1998; Harvey, 1990; Webster, 1995). As cited in Webster (1995), Castells’ central observation on this issue is that “the development of IT networks around the globe promotes the importance of information flows for economic and social organization while simultaneously it reduces the significance of particular places” (p. 199).

Human experience is linked directly to the spatial and temporal context in which it takes place, thus, one of the key characteristics of new information technologies is the promise of fundamentally changing our ability to communicate across time and space (Harvey, 1990; 2000). In the spaces opened by this new time-space relationship, it is believed by many that new social arrangements, understandings and configurations may emerge. In an information economy the valued currency becomes knowledge rather than cash, allowing us to momentarily forget the connection between commodities and social structure. Bill Gates (1996) confidently predicted that

> The global information market will combine all the various ways human goods, services, and ideas are exchanged. ..Your workplace and your ideas of what it
means to be educated will be transformed, perhaps almost beyond recognition.

Your sense of identity, of who you are and where you belong, may open up considerably. (pp. 6-7)

Here, Gates was not citing empirical research. He was making predictions based on his and others’ beliefs. In a sense, then, he was telling a fictional tale with enough bases in fact, both then and now, to sustain it – a modern fairytale, if you will.

**Postmodern fairytales**

This is a fairytale set in a postmodern, postindustrial world. It is also a tale that includes only those of us in affluent societies with access to computer mediated information processing. It is not a tale that is inclusive of ‘traditional’ societies or of marginalized groups within our own, although the intent of the tale is to have us believe that the benefits we-the-wealthy accrue will pass onto the other sectors of our society. At its most extreme, the ICT fairytale describes a glorious globalization refracted through the machinery of information technology. In this story, globalization and the information computer technology which has amplified it in this era, will potentially make the world more accessible to all, bringing into existence a time and place where difference and the ‘other’ will be eroded and replaced with net-based communities where physical appearance and cultural allegiance will be as if nothing. Issues of exclusion, enhanced poverty and the increasing gap between rich and poor globally do not appear in these versions of the globalization/ICT story. A tenuous moral link can be made here—by accepting globalization and the information technology that makes it possible, we are doing our bit to
help those in our community less well off than ourselves. This story follows a somewhat illogical chain: if we adopt new information technologies and the information market that accompanies them we are moving toward a society premised on new identity formations, new communities, new ways of knowing and being. The chain of argument leads us to expect, as a result, a more just society with more fairly distributed wealth. The empirical evidence, however, would indicate that this is not necessarily the case (Castells, 1997; 1998; Held, 1995). In Australia, for example, the past decade has seen an increased gap between wealthy and poor and the emergence of intergenerational and clearly delineated poverty zones (Edgar, 1999; Harding, 1998; QCOSS, 1999).

In an age of rapid information exchange, a tale such as this quickly becomes embedded in popular culture. It begins to influence our decisions and expectations. This has had implications in the arena of tertiary education, particularly in an era of enforced marketization of this sector (Marginson & Considine, 2000). The promise of information technology and the fundamental transformation of our economic and social lives have influenced the expectations and policy decisions of those working within our tertiary institutions. For academics there will be more freedom from face-to-face teaching, from the monotony of repeat tutorials, from the calipers of strict physical attendance requirements, and as an added bonus, there will be cost effectiveness. But there’s more: not only will we reap these personal, faculty-based rewards but we will also create more flexible, user-friendly learning environments for our students. In our pursuit of quality teaching and learning, we can seize the opportunity to build new learning communities on-line. We can
use information technology and the changed world of globalizing capitalism to create new pedagogies and new relationships to knowledge and our students.

Read selectively, this is a vision of a utopic educational future that can be made to happen in the present. Fueled by this tale, my colleagues and I set out to enter this shiny new world, however, as Bill Gates (1996) himself observed “information technology is not a panacea” (p. 10), and our experiences caused us to pause and question. Are the promises associated with information computer technology (ICT) linked to expanded choice and improved lives, or are they merely illusory?

In the true sense of the traditional fairy tale, ours is a cautionary story. In this paper, we describe the fairytale as it was passed onto us as university lecturers working in a large regional university in an economic time characterized by rationalization and increased emphasis on performance, and our response. We then consider the implications of our experiences for teaching and learning in the tertiary sector.

**Within universities: A bumpy ride for academics**

There can be no doubt that knowledge is situated (Foucault, 1970; Harvey, 2000; LeFebvre, 1991; Proctor & Smith, 1999). The context in which we find ourselves will have its own ethical standards and operational codes. For University academics the context is one mediated by external and internal forces that vary according to rank and position. All contexts - government, senior management and front line teaching academics – have a
unifying interest in the development of information and communication technologies. Furthermore, while the discourses may vary with position in postmodern Universities, there is one overwhelmingly dominant influence that has governed decision making of late - the measurement of performance. ‘Performativity’ as this phenomenon is termed in the literature (Ball, 2000), is the mania of Universities that some would argue is changing what were spaces of hope in modernist terms into capitalist clones writ mad. Centrally driven agendas for reform such as the UK’s Deering Report and Australia’s Kemp Report have and are being translated into measurements and indicators that are reminiscent of a totalitarian state. To add to the misery of accountability at every turn is the ease with which the process can be managed within an ICT world. It’s as if the arrival of time and space managing information sources has been timed to fit with the changed management style. Reality is that for academics in pursuit of scholarship, or that which is most likely to have motivated their career choice, this all pervasive managerialism creates a new kind of competitive environment which conflicts with time availability for the pursuit of new knowledge (Martin, 1999).

The new scene creates a chicken and the egg situation where time required adhering to the new efficiencies for enhanced productivity restricts time opportunities to produce the goods that create the ticks in the performance boxes. Aware that missed targets may have consequences associated for budgets and resources allocation is one of the worrying signs of a new kind of individualism in pursuit of excellence within conformist boundaries. In fact, some would argue maybe cynically, that rather than a sense of community among
scholars the emergent culture is one of balkanisation where expediency rules performance.

The reasons why such less than harmonious contexts may develop are complex. Part of the problem must lie in the role of agency and with this the failure of managers to imagine the real impact of their decisions in the workplace (Chubb, 2000). To overcome these issues commentators like Ramsden and Martin (1996) entreat academics to store their memories of collegial decision making and learn new and smart strategies of operating within the known and non-negotiable performance boundaries. Bottom-up responses are needed to interpret top-down practices (Robertson, 1998).

To avoid despair some reflection on the nature of our core business in teaching and learning is useful. In the day to day business of the University academic, teaching is the core business. Within that space the primary concern of academics has always been scholarship. Hence, judging scholarship can be viewed as being at the heart of being an academic (Boyer, 1990). If we agree with this and that we all make such judgments we should be able to agree also on a definition of scholarship that is transferable across disciplines and suitable for formal accountability purposes in teaching that sits comfortably alongside scholarship models of research. At the end of the journey through a university course we as academics will make judgements on the assignment evidence produced by students. They provide a basis for the measurement of scholarship as a unifying dimension for analysis (Andersen, 2000). A model for this notion of scholarship expanded by Ernest Boyer in the early 1990’s can be found in The Boyer Commission’s paper Reinventing Undergraduate
Education (see http://notes.cc.sunysb.edu/Pres/boyer.nsf/webform/images/$File/boyer.txt)

Developing a model of scholarship seems a sound catalyst for dealing with this brave new world culture of diverse audiences in universities. Time and place specific knowledge no matter how delivered and regardless of enquiry tool should generate teaching and learning outcomes that can be judged equitably and gather consensus that matches opinions on research. Based on the experience and critical reflection of university teachers the quality of those judgments can vary enormously. As Healey (2000) argues, some teachers will be at the end of the continuum that relies on intuition regarding what appears to work with students. At the opposite end of the continuum will be those academics who genuinely embrace their teaching with the same degree of scholarship that might be accorded by the first group for their research.

An added advantage of such context specific thinking about the condition of working in a University environment is that dialogues situated amid common concerns like the nature of scholarship are a means to a more rewarding existence. They help create the shared discourse and reaffirm the place of academics in the enduring culture of Universities. The arrival of the new information and communication technologies and the corresponding growth of managerial structure modelled on business principles may have thrown many of us off balance for some little while. But, academics are bright people who can and do adapt – even when the mist from the wand of the lead fairy loses its power. In fact, as we have found and try to portray in the metaphor of our mystic tale coming to terms with new tools
and facing our demons can have rewards beyond the cloisters – it can be fun.

**Case studies: A cautionary tale of hope and trust**

*Margaret’s story*

Anyone who has been a teaching academic for a decade or two is likely to have to face the crunch time of the broken glass slipper and the prospect of Cinderella’s metamorphosis as the ugly witch. Crunch time can be the telling signs of repetitive out dated lectures, lethargy whenever the car is parked in the University grounds, failing to find amusement in stories told by students and younger colleagues, noticing that the ‘boss’ is looking very young, and generally not wanting to interact with others unless it suits. This kind of workplace depression is well documented in the literature on workplace behaviours (Crowther, Caldwell, Chapman, Lakomski & Ogilvie, 1994). It signals a time when self-reflection is crucial for any quality contributions to come. The self-appraisal process may lead to a changed career path or change itself may simply sweep you up to the magic carpet with the excitement of new opportunities. Reinventing personal careers in ways that are simultaneously fulfilling for the individual and satisfy corporate needs may seem idealistic.

I believe it is possible.

I have no doubt that introducing ICT to our teaching and learning environment has reinvigorated my interest in thinking about the teaching and learning process. Ironically this engagement with the mode of delivery has put me in touch with personal strengths identified by students in evaluations of former eras. On ‘enthusiasm for the subject’ and
‘expert knowledge’ I have generally managed to score highly on feedback. This has remained a constant with the gradual transition of my course for pre-service Bachelor of Education students from all face-to-face teaching to optional on-line learning. The discipline helps. My research interests in environmental cognition feed directly into the social sciences curriculum courses that I teach. I am an avid traveller with a large appetite for studying exotic places and people which feeds into my teaching with mixed materials including stories of real people with colourful photographs and assorted visual imagery. Backed by a long standing belief that lasting learning occurs in the real world and not the musty corridors of badly lit buildings all these new pieces of equipment have enabled me to indulge my belief by bringing the outside world to the lecture theatre.

Scanned photographs, movies of people and places all neatly packaged into PowerPoint presentations have been the ongoing challenge of the past two years. Each week these presentations have been supported by a movie of the lecture which has streamed later into the presentation. I now have a set of materials that have survived the scrutiny of students and seem ready for translation to a more professional looking platform worthy of wider viewing.

Earlier in 2000 to gain feedback on the preferred modes of delivery a survey questionnaire was developed asking students to identify the sources of material used, their preferences and comment where appropriate. While, not surprisingly these first semester data showed an overwhelming preference for face-to-face teaching (90+ percent) and use of the Web
and/or fileserver materials for back-up, by the end of the second semester for this year long unit the attendance in lectures had declined but tutorial attendance remained high. Tracking attendance habits and matched learning outcomes or assignment evidence along in successive years will form part of the ongoing evaluation.

So what of the less romantic side of this story. Climbing on to the carpet of ICT learning has and is hard. Prior experience does little to help when faced with a full lecture theatre and the material which you have spent all weekend and many long evening hours preparing will not work because of a faulty connection between the video projector and your laptop, or some other technical reason. At these times it is tempting to return to old habits with the whiteboard and do what you know you can do well. But that’s the coward’s way out of the new world.

Success in this new university environment appears dependent on the following:

Building learning partnerships and communities with students and colleagues. You can’t do it alone anymore! [My experience is that students are full of empathy and helpful tips for the ‘idiots’ guide to IT success.]

Being patient with IT support staff and their attempts to turn academics into IT wizards.

Seizing the day with the opportunities of ICT to broaden our knowledge barriers.

Viewing new technologies as an integral part of the way we live our lives.

Valuing the new learning required to operate within the time space compressed global.

Accepting that the time, intellectual and financial investment will reap its rewards.
Finding smart ways to apply these new skills to our own disciplines.

These solutions come from personal experience.

*Victoria’s story: a note of caution*

While Margaret describes ‘crunch time’ from the viewpoint of an experienced senior academic it has a different meaning when viewed from the perspective of a new appointment. The signs are also different: the overwhelming nature of undergraduate teaching—multiple tutorials, gruelling lecture schedules, and rapidly changing content; the fear of failure; and, the ongoing physical demands involved in attempting to combine teaching responsibilities with the need to conduct research and to publish. These are issues facing all academics and particularly those new to the profession. Added to this pressure is the current focus within the university sector on performance and the emergence of new managerial discourses and practices.

The promise of ICT has become a fundamental part of the metamorphosis of the ‘new’ university throughout the nineties and into this century and Margaret has described the process of developing new types of delivery options as a response. In this case study, I wish to focus on the response of students to the seemingly simple incorporation of technologized communication into what had previously been a traditionally delivered course—the use of email to facilitate an assessment item. While other web-based course components were built in over time, this instance illustrates a number of issues related to the incorporation of new information technologies and more flexible pedagogies into
In 1999 and 2000, I commenced the incorporation of email assessment tasks into Language and Literacy units I was developing. This formed part of a research project funded by the university into the development of flexible learning. The underlying purpose of these tasks was threefold: (1) require students to demonstrate competence at the use of email; (2) experience its potential for classroom teachers in relation to development of learning tasks; and (3) allow time management flexibility for students. That is, within the timeframe of task allocation and task deadline, it was up to each of them when to respond and from where.

Linked to the promise of changes in our understandings of time and space and the opportunity to begin to develop on-line subjectivities, I believed that this task would contribute toward the development of a culture that viewed such flexibility and use of communications technology as ordinary and necessary. I also expected that students such as those with relatively heavy work and family commitments (Abbott-Chapman, 1998) would welcome the chance to decide where they would be when submitting and the broader submission window that the exactness of email could supply.

In relation to the use of computer-mediated communication this was a minor and simple task. Unexpectedly, the email response task soon became the source of great angst for some students. This was not linked to the nature of the response called for by the task itself but rather by the requirement that the piece of work be emailed to a designated email address by
a designated time. Students reported feeling insecure about whether or not their assignment had successfully reached its destination. The result of this was anxiety and repeated emailing of the same text. Some students emailed their assignment up to four separate times and then rang/visited/emailed to find out if it had arrived. Given the small percentage of overall marks allocated to this initial task relative to the levels of anxiety observed, it seemed that the act of faith in the technology implicit in sending a piece of assessable work into the ether was very tenuous.

To compensate, and further develop the incorporation of ICT into my courses to facilitate flexible delivery, the ICT staff developed and implemented an automated response system which, in theory, allowed students to have the security of an acknowledgement of submission date and time. Hundreds of frustrated students soon found that the automated response was not, in fact, foolproof—at the end of the semester I was still sorting out the aftermath of missing, misdirected and repeated email responses.

I describe this experience to illustrate a number of issues. We make particular assumptions about the ways in which students share our vision of this new world of ICT and of their ability to access it freely. For all its inherent inequalities, the university is a privileged sociocultural and economic site. We are prone, therefore, to losing touch with the realities of life on the outside. In this instance, student’s ability to make use of the flexibility of email response tasks was linked to their off-campus access to networked computers.
The technology itself proved to be unreliable, making a simple task much more difficult than necessary. The point here is that the human and resource cost of incorporating these new communications technologies into our courses is often enormous and yet left unrecognised and unexamined.

Clearly, making this vision a reality will take the dedication of resources on a university level and recognition that this is not the easy pathway. My experiences lead me to believe that many educators are out there, in their faculties and offices, lured by the promise of new technologies, each individually pouring hard-won resources and time into a fairy tale. University administrators encourage us to develop flexible, on-line, cost effective courses. In such an environment, there is a real risk of isolation and exploitation of both academic and ICT staff.

On the positive side, I did build a small community of learning with colleagues who are also drawn to the ICT fairy tale. Collaboration with these colleagues was a constant source of inspiration, support and friendship.

Shelley’s story

The changing nature of work for the university academic and the promise of ICT in delivery of university programs has been emphasised by Margaret and Vicki. My story is the extent to which I have integrated ICT to assist flexible delivery of a mathematics curriculum unit within the undergraduate Bachelor of Education program.
As an experienced and successful classroom practitioner but relatively new university academic the tension I feel is between providing my students with practical and productive mathematics pedagogy as future teachers as well as high level academic and research skills as potential future educational researchers. The structure of my program is a reflection of my beliefs about mathematics teaching and learning, where face-to-face lectures and tutorials are an avenue through which I energise my own passion and enthusiasm for my subject. I strive to make my lectures and tutorials multi-sensory – visual, auditory, tactile, kinaesthetic and interactive learning experiences. With my aim to promote students’ subject-matter knowledge and pedagogic content knowledge (Schulman, 1986), and given the limited allocation of mathematics curriculum as a percentage of the total undergraduate program, I take advantage of face-to-face delivery to model best practice in mathematics education, maximising the chances of hidden mathematics curriculum being absorbed through osmosis by my students.

In this sense, I actively teach to write on my students’ bodies (McWilliam & Palmer, 1996); a luxury that is not easily afforded through on-line delivery (Beckett, 1998). Like Margaret and Vicki, in an effort to cater to the needs of our student clientele, I attempted to embrace technology to provide flexible access to my unit. Two goals were set: (1) to assist students to promote their own ICT skills through exploring on-line mathematics education resources, and (2) to capture my own lecture ‘performances’ on video that would be uploaded to my website and make available for students unable to attend the lectures.
To measure the extent to which my first goal was achieved, I asked students to write a reflection of the web search as an inclusion to their resultant assignment. Analysis of their responses indicated the benefit of such an assignment, with students describing their initial fear at such a task changing to developing interest and excitement in a new on-line world. Evaluation of my second goal was through reviewing the final on-line product, and surveying students on their preferences for face-to-face tutorials and lectures versus on-line presentations. The on-line product was deemed quite unsuitable due to technology limitations, where the video camera captured me as a “talking head”, but failed to capture the still overheads and projected images presented in the live delivery. Overwhelmingly, and not surprisingly, students voted for face-to-face delivery, and also voted strongly for hard copies of lecture and tutorial notes to be made available and easily accessible. Continual high attendance by students at all lectures and tutorials throughout the semester also served as an indicator of the positive way the students regarded the unit.

My story here is my brief journey through Oz and my search for the Wizard to take me home to ‘Kansas’, or at least provide me with the knowledge, skills and expertise to flexibly deliver my course in a high quality fashion with minimal pain and discomfort. The reality of course is that this is impossible to do simply on an individual basis, but lacking a solid supportive infrastructure, gathering mutual support from colleagues as we all dabble, explore and reflect upon integrating technology for flexible delivery, has been a valuable experience. Reflecting on my own beginning journey, several notions have been reinforced:
• That a greater chance of quality course delivery is achievable through high infrastructure and this is not cheap (Smith, 1997).

• That in teacher education, selective aspects of technology, such as electronic notice boards, email, chat rooms, can easily enhance programs and assist in communication links between students and lecturers (Manathunga, 2000).

• That innovators will embrace new ideas/technologies, but that diffusion of the new product will “depend on addressing perceptions and needs of the bulk of the end users who are not “innovators”” (Hansen, Deshpande & Muragesan, 1999, p. 5).

• But that ultimately, the nature and content of some courses make them unsuitable for flexible delivery, especially mathematics education programs at the undergraduate level (Diezmann & Yelland, 2000).

Conclusion

Taken as a whole, our experiences are cautionary—there are no easy pathways to equity and a better future. A better future for all is not the responsibility of any technology, rather, it is our responsibility as the developers and users of that technology and as the custodians of scholarship within our respective disciplines. Returning to Gates (1996), one of the architects of this information technology era, “the global interactive network will transform our culture as dramatically as Gutenberg’s press did the Middle Ages” (p.9) but the form of this society is ours to determine by the choices we make. Our experiences lead us to believe that part of the fairy tale is possible to achieve but that we must address issues of equity and pedagogy in order to meet our responsibilities and our needs as educators and members
of a privileged community.

References


