

The Knowledge Tree: an E-journal of Learning and Innovation

The Knowledge Tree goes social
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MEDIA RELEASE

The Knowledge Tree goes social

From May, accessing the latest research and innovation in global e-learning practice will become more social. *The Knowledge Tree: an e-Journal of Learning Innovation* Edition 9, due for release on Tuesday 16 May, will be presented in social software. This means it will be available through your browser as usual but also through Really Simple Syndication, or Rich Site Summary (RSS) technology, for feeding to your aggregator and mobile device. Don't worry, there are tutorials and you can even listen to mp3s. :o)

Edition 9 focuses on social networking and mobile learning.

Joanne Jacobs, seconded from the Brisbane Graduate School of Business, at Queensland University of Technology to project manage collaborative projects, research and commercialisation at the Australasian Cooperative Research Centre (CRC) for Interaction Design, writes our lead article '*The Knowledge Tree Goes Social*' on the impact of blogging and social software on education, publishing and play.

Dr. Michael Thomas, Associate Professor at Nagoya University of Commerce and Business in Japan reviews *mLearning: Mobile Learning and Performance in the Palm of your Hand* by David Metcalf.

James Farmer of Deakin University clarifies the benefits of using social software, eg. Word Press, for educational purposes, providing examples from Edublogs.org and *The Knowledge Tree*.

Marcus Ragus of TAFE Tasmania, considers the future of m-learning with his latest 'round up' of ideas since mLearn 2005 in South Africa.

Ian Robertson, of Royal Melbourne Institute of Technology, considers the extent to which Vocational and Technical Education (VTE) teachers use 21 identified technology tools.

Margaret Robson, of Canberra Institute of Technology, discusses strategies to assist adult learners to find their voices online and feel that their contributions are heard and valued.

A live online 'conversation' with our lead writer will follow the Edition 9 release, allowing users to discuss and debate articles and surrounding issues in greater depth. [Click to join Joanne Jacobs on 30 May at 2pm EST](#). The 'conversation' will run in conjunction with activities run by the Australian Flexible Learning Framework's (Framework) E-learning Networks Project.

For more about the 'conversation' and how to participate visit:
<http://www.flexiblelearning.net.au/networks>

Details of how to set up and configure your aggregator and mobile device are available in *The Knowledge Tree* space at
<http://flexiblelearning.net.au/knowledgetree>

For further information contact the editor, Jo Murray on tel: +61 (0)3 6253 6029 or email: jomurray@southcom.com.au

To access contribution guidelines and previous editions of the *Knowledge Tree* visit: <http://flexiblelearning.net.au/knowledgetree>

For more information about the Australian Flexible Learning Framework, its products, resources and support networks, visit: <http://www.flexiblelearning.net.au>

Ends

For further information about this story contact the Framework National Communication Team, Simone Kurtz tel: (07) 3237 1742 or Sean Felsman tel: (07) 3237 0352, or email: flexenews@flexiblelearning.net.au

Editorial

Accessing the latest research and innovation in global e-learning practice is now more social. Edition 9 focuses on social networking and mobile learning and is presented in social software. Yes we have joined the blogosphere!

This means the e-journal is available through your browser, as usual, but also through Really Simple Syndication, or Rich Site Summary (RSS) technology, for feeding to your aggregator and mobile device. A tutorial is on the site to help you.

We have some great contributions for you. So get into the conversation! Make the most of the social software by providing comments to the authors at the bottom of each contribution and subscribing to those pages, so you can keep abreast of others' views on the topic. As usual text files are available in downloadable format for printing and you can even listen to mp3s podcasting the dulcet tones of the authors themselves. :o)

Joanne Jacobs, seconded from the Brisbane Graduate School of Business, at Queensland University of Technology to project manage collaborative projects, research and commercialisation at the Australasian Cooperative Research Centre (CRC) for Interaction Design, writes our lead article 'The Knowledge Tree Goes Social' on the impact of blogging and social software on education, publishing and play.

In our peer reviewed article titled 'Surveying online technology-A matter of design', Ian Robertson, of Royal Melbourne Institute of Technology (RMIT) University considers the extent to which Vocational and Technical Education (VTE) teachers use 21 identified e-learning functionalities.

Dr. Michael Thomas, Associate Professor at Nagoya University of Commerce and Business in Japan reviews mLearning: Mobile Learning and Performance in the Palm of your Hand by David Metcalf.

James Farmer of Deakin University, clarifies the benefits of using social software for educational purposes, eg. Word Press Multi User, in 'Why blog together?'

Marcus Ragus of TAFE Tasmania, describes 'Mlearning: A future of learning' with his latest 'round up' of ideas since mLearn 2005 in South Africa.

Margaret Robson, of Canberra Institute of Technology, discusses strategies to assist adult learners to find their voices online and feel that their contributions are heard and valued.

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Lead article: *The Knowledge Tree goes social*

Abstract

The Knowledge Tree's adoption of the blogging format for this ninth edition of the journal is an exemplar of changes occurring on an industry-wide basis both in publishing and education. There is a general trend towards a system of infinitely negotiable content publishing, and this is challenging the authority and longevity of traditionally published content.

The value of blogging systems in generating debate is clear: ease of engagement and the dig-down method of tagged searching and self-education online has brought about a period of active content consumption never achieved with traditional media product. But as a publishing mechanism, there is also distinct value for flexible learners and researchers in flexible learning in a user-driven knowledge exchange. Blogs have begun to emerge as a significant force in changing audience perception of ideas, organisations and products, partly because of the communicative nature of the technology, but also because consumers, researchers and learners in the digital age are becoming more demanding and exacting of content they consume as part of their daily routine. The technology may be more conversational than the rigidly complete form of publishing traditionally associated with journal publication, but such vernacularisation of idea development does not necessarily represent mass amateurisation of knowledge. Indeed, the act of playing with ideas via blogging architecture is distinctly useful in facilitating understanding of complex theories, and it enables much more effective knowledge aggregation and dissemination.

In this article, the value of blogs is calculated in terms of the challenges that they pose to existing paradigms in the publishing sector, including the transformational notion of infinitely negotiable content creation. The power of play as a technique in generating meaning is explored with strong reference to the work of Kane (2004) in his *The Play Ethic: A Manifesto for a Different Way of Living*. The role of blogs in facilitating and activating negotiated content publishing is presented as an exemplar of that spirit of play.

Introduction

The Internet is enabling conversations among human beings that were simply not possible in the era of mass media (Locke et al. 2000:Thesis 6:xii).

Welcome to a conversation. In an age where mass consumption has primed us as readers, learners, producers and consumers to appreciate the quality, reliability and rigidity of published ideas, here is an iconoclastic moment: this article isn't the last word on social software and social networks. But it is an attempt to celebrate the move to a social framework of publication, and it is an exploration of a series of ideas about how best to gain value from the change. Importantly, it is only the beginning of the conversation that I hope will ensue.

In this ninth edition, *The Knowledge Tree: an e-Journal of Learning Innovation*, the journal of the Australian Flexible Learning Framework (Framework) celebrates its move to a new format – that of the blog. For many, the concept of a blog is still problematic. Based on the reverse chronological posting of articles that often contain hypertext links and that can permit reader engagement through commentary systems, blogs are more of a protocol and praxis than a media production mechanism, because they invite the act of communication, rather than simply broadcasting ideas to a mass audience. Yet blogs theoretically and practically can also be used as a vehicle for transmissions of such ideas.

Even so, not all commentators are convinced that the social software technologies of blogging represent a positive change to ideas publishing. Nicholas Carr (2005) writes (somewhat ironically in his blog) that blogs have a tendency to be superficial, promote echolalia, and reinforce cultural or political perspectives, rather than subjecting them to deconstruction and negotiation. But Carr's criticism is predominantly associated with what he describes as the 'Cult of the Amateur', where the economics of production and consumption are driven by collective (and amateur) control, rather than professional quality. Because anyone can publish his/her own blog, and for the most part, any reader can respond to a blog post, blogs certainly place power in the hands of the masses, and thus, the quality of contributions to debate and exchange cannot be assured. Nevertheless, the blogosphere and social software tools generally have also introduced a culture of scepticism, and empowered even amateur audiences in the theatre of critical debate. In particular, where blogs are being used as a supplement to, or channel for, professionally driven content creation, they are powerful tools in idea promulgation, exploration, and negotiation.

As such, blogs represent a peculiarly suitable channel for communicating ideas about flexible learning. Rather than replacing existing education techniques, flexible learning, which includes e-learning, as a concept '...is about the learner deciding what, where, when and how they learn' (Department of Education Science and Training 2006:7). Blogs are uniquely suited to users who wish to choose their own time for engagement with content, and they permit many styles of engagement beyond mere reading. Whilst commentary systems are the most prominent example of participation, there is also the phenomenon of cross-linkages, trackbacks, tagging and independent further exploration – literally a knowledge tree of idea generation. Thus blogs could well be regarded as the natural habitat and channel for flexible learning.

However, no exploration of the value of blogs as a vehicle for communication would be complete without an understanding of how the technology responds to the imperatives characteristic of an active digital culture. It is necessary to consider how the blog format contributes to an emerging trend among techno-savvy audiences: the rise of *play* as a means of generating meaning. While the concept of play may be embedded in educational theory, the role of play in planning, identity formation and process improvement has only recently found relevance in professional (business) contexts and management theory. As such, the impact of blogs in facilitating play is only now beginning to be acknowledged in literature, and in methods for disseminating knowledge generally.

In this article, the value of blogs is calculated in terms of the challenges that they pose to existing paradigms in the publishing sector, including the transformational notion of infinitely negotiable content creation. The power of play as a technique in generating meaning is explored with strong reference to the work of Kane (2004) in his *The Play Ethic: A Manifesto for a Different Way of Living*. The role of blogs in facilitating and activating negotiated content publishing is presented as an exemplar of that spirit of play.

Blogging (as) history, and blogging literature

When Locke et al. developed *The Cluetrain Manifesto* in 2000, with the opening thesis that 'markets are conversations', it was a celebration of the interconnectedness of producers and consumers in the Network Society (Locke et al. 2000, Castells 2000). But whilst the potential of the technology permitted conversations to emerge, and the anecdotes told by technological optimists, such as Howard Rheingold in his *Virtual Community*, Nicholas Negroponte in his *Being Digital*, and Esther Dyson in her *Release 2.0: A Design for Living in the Digital Age*, all seemed to herald a revolution in communication systems, the true

promise of the information society had yet to be fulfilled. Further, the market and business oriented aspects of technology development for the internet were occurring almost against the grain of social communications systems; while conversations were being held online in bulletin boards, chat and other precursors to social software systems, they were regarded as remote from those technologies dealing with e-business, e-commerce and business management. But suddenly at the end of the last millennium, markets were finally beginning to accept that it was now not just technologically possible but actually *feasible* for one-to-many-to-one communications to support business and organisational functions (Hoffman and Novak 1996:50-68), and where the human dimension of ICTs was just beginning to emerge. As Carr (2005) has noted, Web 1.0 (circa 1994–1999) may have been built on the rhetoric of conversations, but in practice the often-promised dreams of a democratic and participatory technological Utopia were simply not realised.

Interconnectivity had instead heralded the dawning of an age of information overload, where a new elite emerged among the hackers and true geeks of the Network Society; those who could navigate the networks to find the information they needed quickly and efficiently.

The practice that came to be known as weblogging or blogging quickly emerged as the tool of choice for that information elite. Through collaborative sharing and commentating on information sources discovered online, these information gardeners were able to weed out the useless or apocryphal sources and foster the development and popularity of reliable and interesting information sources. Sites such as Slashdot, Boing Boing and Metafilter emerged as primary sources for technological, political and popular culture resources for the digital elite. (See Useful Links herein for details.) Individual bloggers such as Howard Rheingold, Clay Shirky, Tim O'Reilly, Glenn Reynolds and Dan Gillmor grew in reputation as distinguished commentators on technological change, politics, and digital culture. The unique architectural and conversational characteristics of blogs were delivering a peer-oriented quality framework for content accessed online.

Simultaneously, the rise of blogging software such as Movable Type, Grey Matter and Word Press, and blog hosting services for the masses (notably LiveJournal and Blogger) emerged as vehicles for simplifying the publishing process of updating websites, automating archived posts and creating linkages and networks with friends and other bloggers. Whilst the primary critical focus for commentators on this new medium was on the publishing software itself, it was the other aspects of blogging – syndication, trackbacks, tagging, shared linkages and friendster-style networks that actually drove the popularity and perceived value of blogging among its advocates. Really Simple Syndication (RSS) allowed blogging users to aggregate their online content sources into readers, so that they could browse blog post titles and content for anything they may want to explore further without having to visit the website home page. Trackbacks allowed bloggers to see who was referring back to content sourced from a blog post. Tagging allowed bloggers and consumers of RSS feeds to set up mechanisms for aggregating knowledge about a specific idea, event, person, or product, and further refine their content exploration online. Collaborative linking systems such as del.icio.us allowed users to pool their resources on tagged entries and ideas, to expand the possible sources for information access. And finally friends' networks permitted the aggregation of content developed by known sources, and forged connections between unknown bloggers on the basis of their posts. Extremely quickly, the act of blogging, active commentary and all the other value additions embedded in blogging architecture collectively achieved the vision that Locke et al. (2000) had foreshadowed in *The Cluetrain Manifesto*. Markets became conversations almost overnight.

Of course, since this occurred, there has been growing scepticism about the value of blog-based sources as the number of blogs has grown and the activity in blogs has generally

declined (Pew Internet and Lifestyle Research 2005). Shirky (2003) has noted that the longevity of the term 'blog' may well decay. Indeed, the time may well have passed wherein blogging technology has infiltrated so many forms of publishing, aggregation and syndication, that the significance of the word as an harbinger of a new form of communication has simply drained away. If so, the word 'blog' has become what Bruce Sterling (2006) describes as a technological 'archaeologism' – a word which represents a concept that is at first revolutionary (and manifest as a neologism), but which over time is so widely adopted, or so adapted to a multiplicity of purposes, that its branding, initially calculated for early innovator adoption, has been made obsolescent in an era of critical mass appropriation. However, the importance of the technology in establishing ease and automation of electronic publishing, and in permitting a more evolutionary design of idea and argument negotiation has not been lost. The implicit value of negotiation and conflict transformation (as opposed to the more finite notion of conflict 'resolution') in sustaining audience interest and better meeting the needs of an active marketplace, is so obvious that the technological infrastructure supporting the practice is functionally irrelevant. Nevertheless, it is still useful to explore how blogging is differentiated from traditional publishing in current literature, because the technology itself is affecting consumer expectations of information sources and content available both online and offline. In consequence, it is also constructive to consider how the technology can be used as a powerful medium for scenario mapping and to examine how blogs can be utilised to support the exploration of what Kane (2004) and Sutton-Smith (1997) have described as 'adaptive potentialities', because the use of blogs as a means of playing with ideas is central to understanding the impact of the medium in fostering flexible learning.

Most scholarly literature pertaining to blogging is confined to the (often uneasy) relationship the phenomenon has with professional journalism, and the use of blogs as a means of providing a better educational experience (Gillmor 2004, Williams & Jacobs 2004, Mortensen & Walker 2002). The consideration of the role of blogs in supplementing existing publishing and educational formats tends to be lost amid concerns about blogs generating a kind of mass amateurisation of knowledge, as Carr (2005) and others have identified (Shirky 2002, Coates 2003). However there is a clear trend in current literature and professional practice towards (perhaps grudging) acceptance of the blog as an interactive space.

Blogs have been described by a number of commentators (Rowley 1997, Weinberger 2003, Gregg 2006) as agents that better accommodate the act of communication. Heidegger's (1954, published in English in 1976) notion of language as a medium for communication, rather than communication in itself, is cited as basis for arguing that traditional publishing systems are inadequate in generating meaning for audiences. Weinberger (2003) argues that when we use language, '...(w)e are ... turning towards the world together, letting the world reveal itself' (2003:para. 8). In transmitting language and in presenting ideas and knowledge, blogs are a more inclusive and participatory form of publication than traditional press and thus they are closer to genuine communication.

While such communication does involve a degree of vernacularisation of content creation, it does not necessarily follow that the conversational attributes of blogging imply mass amateurisation of publishing generally. Indeed, the very architecture and structure of the blog supports highly professional writing and corporate practices in addition to facilitating the act of communication. Mainstream media are citing copyright infringement and defamation as commonly held concerns about the phenomenon of blogging, but the *practice* of blogging does not tend to support these concerns. Indeed, the practice encourages cross-referencing of quoted works, critical discussions and the presentation of additional resources via hyperlinks. Blood (2002) argues that blogs therefore act as training for professional practice in writing, and in professional communication more

generally (Blood 2002:90-92). Gillmor (2004) adds that the more 'professional' the blog (as indicated by association with a mainstream media institution, corporation or publishing house), the more likely it is to have influence over decision making, and the more likely it is to encourage participation and debate.

Finally, there is a strong sense in current information and communications technology literature that blogs have the power to affect individuals and group decision making. The notion of media ecology and transformative technologies was recently explored in Downes' *Interactive Realism*, where he argued that cyberspace is best understood as a new communicative environment using digital technologies to create new experience (2006:140). Downes is quick to censor those technologically utopian commentators who argue that the technology itself is the catalyst for change, but he admits that media ecology theory is useful in determining how technology can 'calibrate' perception. For the phenomenon of blogging, this is a particularly interesting thread in scholarly literature, because the application of media ecology theory to blogging can assist in ascertaining the *affective* qualities of the practice. If blogs are, as Gillmor (2004) posits, influencing decision making in organisational and business contexts, it is not unreasonable to suggest that those participating in the practice of blogging are also being influenced by each other. These affective qualities are crucial to understanding how blogs can be used to explore potential outcomes, to visualise ideas from alternative perspectives and to act as a competitive space for conflict transformation – in essence, to play.

The power of play

Kane (2004) explores the concept of play as being different from, but complementary to, traditional and puritan Protestant conceptions of work. He argues that increased hours at work and increased emphasis on work as a serious and bureaucratic imperative, is concerning because it is failing to foster innovation and learning around the interests and concerns of an organisation's employees, placing such organisations at a competitive risk.

Kane (2004) builds on Sutton-Smith's (1997) Seven Rhetorics of Play, arguing that an active digital culture inherently supports playful acts as a means of generating and renegotiating meaning. These Seven Rhetorics become a coincidentally useful framework for identifying the class and intention of any blog implementation (Figure 1).

The Modern Rhetorics

Play as progress: education, productive development
Play as imagination: art, scientific hypothesis, culture
Play as selfhood: freedom, voluntarism, activism,
individuality, personal happiness

The Ancient Rhetorics

Play as power: contests in sport, law, markets, war and
even philosophy
Play as identity: carnivale, the rituals of community
Play as fate and chaos: chance, risk-taking, gambling,
divine intervention

Enduring Rhetoric

Play as frivolity: laughter, subversion, inversion,
tomfoolery

Figure 1 A Framework for Identifying Class and Intention in Blog Implementation
(Jacobs 2006, adapted from Kane 2004:15)

Blogging fits Kane's (2004) definition of a playful activity because it involves infinite transformations and adaptations over time, in response to feedback from a viewing public. But there are also variations in the manner in which blogs are implemented, in terms of blogger-intention. For instance, *LiveJournal* is a hosted blogging forum designed to act as a diary system for bloggers, also facilitating sharing of posts among a network of friends, as a stream of content. *LiveJournal* posts are more clearly play as selfhood, identity and frivolity than the other rhetorics. Conversely, political blogs such as *Instapundit* and *LeftIndependent*, would be more closely aligned with play as progress, imagination and power.

Kane's (2004) exploration of the Rhetorics is useful in articulating the value of play, as a means of realising human potential. A playful culture in business, in education, in politics and in communities is profoundly liberating, and it supports innovation, scientific exploration and artistic cultivation far more effectively than the drudgery implicit in an (obsolete) Protestant puritan work ethic. But one of the most important aspects of Kane's work is in his identification of the personalities and motivations of interactive netizens; those he describes as the 'soulitarians'. Rather than focusing on a narrowly digital elite, Kane suggests that these soulitarians shape their identities and influence others through their use of emergent technologies, but they also act in 'the real world' to engage in experiences through festivals, activism and participation in public debate. Kane argues these soulitarians are beginning to realise their collective power (2004:100), and are using tools such as blogs as a means of exerting their influence on communities, on companies and on innovation development.

Fundamentally, what we are seeing with blogging is an extension of what Toffler (1980) intended with the concept of a 'prosumer' – a consumer who actively customises his or her own content. Through RSS and blogging architecture, as well as the strange but important notion of lurking participation (non-active, yet not entirely passive engagement, demonstrated through trackbacks and linkages), there emerges not simply a prosumer, but what Bruns (2005) describes as a 'produser' – a dynamic producer of content, operating in collaboration with a number of other players, affectively and actively channelling information to new audiences. Kane's (2004) soulitarians are produsers, but they are also something more; they are civic citizens of a distinctly networked culture, bestowing their intellectual experience and politico-emotional responses to ideas as a means of augmenting the value of shared knowledge, and influencing idea generation. The playful soulitarians who participate in ongoing debate and discussion are life-long learners as well as educators, keen to use the functional aspects of blogging and other social software tools to plan, to forge identities and to constantly innovate. Importantly, the soulitarians have differing concepts on social and technical realities, thus the push to use ICTs for purposes outside of traditional educational, organisational and strategic contexts has largely been driven by these visionary players.

Inevitably, the playful acts of the soulitarians are also the basis for immense change in produser expectations placed on published works. Again, this does not connote amateurisation of publishing. Instead, an evolving system of critical analysis emerges – something which should not be confused for amateurisation, merely because idea development is transparent, and even public. Simply, the soulitarians are drivers of a new publishing paradigm which augments the output of traditional publishing systems.

A new publishing paradigm and commercial opportunities in blogging

News Corporation's Rupert Murdoch has admitted in several speeches over the past few years that he ought to have taken more notice of blogging and consumer demand for active publishing, and these admissions have been widely identified as the turning point in mainstream acceptance of the importance of blogging (Gibson 2006). However, it is important to note that Murdoch clearly does not intend that blogging should *replace* traditional publishing formats. Indeed, he has made it quite clear that changes in the way mainstream media offer content to readers will undoubtedly extend the importance of media institutions to the masses. Thus the widespread adoption of blogging in journalism, and more generally across the publishing sector, is indicative of a new publishing paradigm based on value addition, rather than substitution of an existing content stream. Murdoch's point is that blogs and other social software applications are useful mechanisms to validate content expressed through 'traditional' channels (whether these are electronically mediated or not), and to drive new content creation.

Essentially, this new publishing paradigm is one which facilitates communication, learning and negotiation. And this is where the traditional publishing sector has commonly misconstrued the potential impact of blogs. The opportunities to be derived from the technologies have been hidden by more banal questions about mass amateurisation of content creation, and the perceived challenge that blogs pose to traditional journalism and published works.

The only explanation I have for the remarkably obtuse manner in which the subject has been so far addressed by the corporate sector, is that the opportunities of blogging must not have been expressed in the form of a business plan to decision makers. Regardless of the dynamism and mass free access to the technologies of blogging, it is still possible to generate substantive commercial and non-commercial returns from adoption of the practice of blogging in open and closed environments. Already in the publishing sector, several publishing houses have used blogs as a promotional channel to foster reader interest in fictional works (even going so far as to develop fictional *blogs*, as occurred with the Doubleday publication, *The Traveler*, by John Twelve Hawks), and there is increasing use of blogs in editing, trialling new writers and growing readerships for prominent authors (Jacobs 2006).

Even so, the commercial and non-commercial prospects to be derived from blogs are not limited to those adopted in the publishing sector. The most significant commercial opportunity for blogging rests in driving audience participation and customer loyalty. The inclusiveness of blogging means that the soulitarian audiences engaging in content delivered through blogging architecture feel more committed to the agency source of that content. The sense of ownership in content negotiated between the source and the blog audience is more palpable, measurable and *reciprocal* than standard consumer engagement models.

Additionally, organisations that implement blogs as a means of communicating with their consumers tend to be perceived as more trustworthy. Because blogs provider consumers with a free voice to respond to an organisation's outputs (whether these be tangible goods, services, information products or education), and because there is an implicit permission in blogging practices for consumers to freely discuss these outputs in their own blogs, there is a perception of transparency and active innovation that can promote competitive advantage. The conversational aspects of a blog-enabled consumer engagement model can effectively provide a channel for the kind of play that Kane advocates in his manifesto.

For the *Dallas Morning News* the blog format was implemented as a space for editors to raise new issues for possible further explanation of the printed edition, and as a transparent decision making mechanism to decide on publication of editorial opinion pieces. Since initial implementation, the print media product has rapidly expanded its blog offerings, finding new audiences for advertisers via the digital media content stream. The practice has led to a company-wide acceptance of almost infinitely negotiable content development.

At Renault in France, the Renault F1 Blog provides the company with an opportunity to reinforce the Renault brand but also to identify and market its association with Formula 1 racing, and to educate about the history, the technologies and processes associated with supporting the team. Augmenting their existing marketing offerings, the blog provides a real time response to issues associated with their F1 franchise, but also manifests as an enduring knowledge base for interested parties.

In the Netherlands, Accenture's suite of blogs allows its consultants to offer a taste of the advice that populates consultancy reports for businesses in the region in a generalised fashion. Regionally specific (and language specific) blog publishing of general interest advice is offered as a means of supporting the Netherlands economy, and for promoting and disseminating the research conducted by the organisation. Commentary systems allow readers to ask consultants questions about research, technology and process at Accenture, and the engagement model humanises the development of understanding both for the consultants, and for audiences of their blogs.

Beyond corporate and business education blogs, there are of course the many and varied iterations of blogs being used in educational contexts: as a supplement to on-campus teaching, as a value-added resource for pedagogues or as an engagement model for distance education and flexible learning systems. At the macro level, American public broadcaster PBS has recently launched *learning.now*, a facility for educators to keep in touch with emergent technologies and theories of education design. One of the more than 69,000 educational blogs presently available online (according to the blog search engine, Sphere), *learning.now* has been established as both a news resource and network space for education specialists, providing information about the best means of using blogs and considering the value of other social software such as wikis and podcasts in educational contexts. At a much more micro level, the uses of blogs for studies undertaken in the Masters of Business Administration (MBA) program at Queensland University of Technology were chronicled by my colleague, Jeremy Williams, and I (Williams and Jacobs 2004), where a subject-oriented blog was provided to allow students to develop their writing and arguing techniques amongst peers, whilst also receiving outside input to their writing from national and international sources who happened upon their ideas. We concluded that use of blogs as a means of providing a public voice for students was both a powerful and positive force in students' educational experiences.

These are just a few examples of the range of corporate, educational and technical applications of blogs, all exhibiting the playful characteristics of idea negotiation, active participation and solicitation of care that Kane identifies as distinctly soulitarian, but they are also clearly commercial, allowing perception management and new income opportunities through advertising. Kane does caution that organisational adoption of social software technologies will require transparency of business practice. Treating the technology as a mere tool, and not as social network architecture will result in an occlusion experience. He argues that the value of social software such as blogs will dramatically deplete should an educator or an organisation choose to use it as a new channel for traditional advertising, because it will denigrate the value of conversations to mere public relations and corporate spin. However, where an organisation is prepared to allow its client

base to drive content creation, there develops a more transparent and distinctly social architecture, and almost incidentally, commercial benefits can evolve from increased client loyalty and investment. As exemplars of a revolution in publishing, corporate, educational and technical iterations of blogging all demonstrate the validation techniques Rupert Murdoch identifies in his speeches on the impact of active publishing, and the clear commercial opportunities arising from a participatory communication strategy. (See Useful Links for details)

Conclusion

The Knowledge Tree's adoption of blogging architecture should not be regarded as an alteration of its mission to enable '...the sharing of research and innovation in global e-learning practice' (Department of Education Science and Training 2006:5). Instead, it is an accommodating and facilitating decision, designed to engage its audience in an ongoing and organic conversation. For that reason, I have questioned my own subtitle in this section, as a conclusion to this article should only be presented as the beginning of debate and conversation, rather than an end. Nonetheless, there arises the question of how critical, and how rich and diverse the debate which follows this article can be, given the self-selection of the readership. I have been cynical enough to state in a prior article (Jacobs 2005) that the elective nature of social software tools, and the common lines of interest that characterise comments contributed to iterations of these applications do not represent formal spaces for negotiation and critical debate. However, in those articles, I referred primarily to the notion of social software tools being used as 'substitution arena' for political negotiation and problem solving. Again it is necessary to bear in mind the 'new paradigm' of augmented, and value added debate that can emerge when social software tools are applied to an existing environment. The value of contact and communication, idea generation and play can still provide an acutely critical dimension to a content stream. These emergent technologies may tend to produce communities of collective understanding and interpretation, but such an outcome is a substantial improvement on traditional publishing; an industry characterised by a hegemonic structure that rendered its audiences powerless to participate in an ongoing debate.

Rushkoff (2003) argues that contact is the driver of social currency, and that social applications and social software have value as facilitators for communication and learning. The evolving publishing format, he argues, enables informed participation and influence. Rushkoff regards himself as pro-consciousness, rather than pro-technology, but his vision is distinctly iconoclastic: rather than valuing published works in accordance with a traditional and structured hierarchy of content development, he considers the act of communication as having primacy over content. For Jacoby (2005), a utopian society is one which is based on iconoclasm, not on tradition, order and structure. While it may be dangerous to consider the transition to the blogging format of this e-journal as essentially utopian, it does herald a romantic and perhaps necessary vision for participation, communication and negotiated understanding. Moving away from the 'copy-ready' tradition of journal production to the more conversational style of the blog, there are now opportunities to engage in ongoing debate, learning through connections and negotiation strategies, rather than merely passively consuming broadcasted ideas.

With the rise in blogging architecture as the transmission mechanism for journals such as this, the empty-vessel strategy of knowledge transmission seems now officially dead. In its place, Kane's (2004) 'soulitarian' concept of learning through digital connections and engagements has emerged. Indeed, it appears an entirely appropriate reflection of the journal title – an organic force of knowledge sharing, and co-creation. In that light (perhaps even, that *enlightenment*), it seems appropriate to recommend playing with the concepts, the ideas and the learning strategies presented in articles, through commentary systems

attached to each entry of this new publishing format. Enjoy, engage, but most importantly, *play*.

Useful Links

Accenture's suite of blogs <http://blogs.accenture.nl/BlogPodium/blogs.php>

Boing Boing <http://www.boingboing.net/>

Dallas Morning News <http://www.dallasnews.com/>

learning.now <http://www.pbs.org/teachersource/learning.now/>

Metafilter <http://www.metafilter.net/>

Renault F1 Blog <http://blog.renaultf1.com/>

PBS Learning.Now Blog <http://www.pbs.org/teachersource/learning.now/>

Sphere Blog Search engine <http://www.sphere.com/>

Slashdot <http://www.slashdot.com/>

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Book Review

***mLearning: Mobile Learning and Performance in the Palm of your Hand* by David Metcalf.**

A great deal of excitement has recently propelled mobile learning or mLearning to the forefront of instructional technology. Much of this enthusiasm is based on the ubiquity of the mobile phone. In fact market analysts predict that by 2008, there will be more than 100 million mobile devices in the world (Metcalf 2006:103) and over 3 billion mobile phone subscribers (Nokia 2005). One potential problem with this scenario, however, is that the availability of a technology primarily designed for purposes other than learning, may not be as amenable to enhancing learning outcomes as is so often believed.

Mobile learning refers to the use of small, portable hand-held devices (personal digital assistants or PDAs, smart phones, laptops) that usually operate in a wireless environment, and have a connection to the Internet. Current projects including digital audio players (such as Apple's iPods) could also be considered mLearning, though they have as yet no wireless capability. These devices promote the use of 'anytime, anywhere' learning, allowing users to transcend the limitations of the traditional presence-based classroom, and to fit learning into their daily lives, whenever they have the time or the inclination. A number of projects have already been sponsored in the field by national governments and the European Commission in particular, the aim being to support lifelong learning initiatives. The United Nations, through its recently concluded World Summit on the Information Society (WSIS) conferences, also gave mLearning a central place in its strategy to bridge the digital divide and spread learning among disadvantaged groups, communities and nations.

While there is an increasing amount of journalistic comment on mobile learning on the Internet, the first scholarly book on the subject – *Mobile Learning: A Handbook for Educators and Trainers* (Kukulska-Hulme and Traxler 2005) – provides a combination of essays and case studies aimed at outlining an academic context and legitimacy for this emerging area of research. A growing body of literature also exists as a result of the yearly [mLearn](#) conferences. Kukulska-Hulme and Traxler (2005) are concerned with describing the task of navigating from mLearning's first to second phase: from a concern with small-scale research projects to a pedagogical concern with learning outcomes. Metcalf's *mLearning: Mobile Learning and Performance in the Palm of your Hand*, the second book on mLearning to appear, is still very much concerned with phase 1, and aimed more at the corporate sector and general reader. While it does not boast the same rigorous engagement with secondary literature or detailed case studies as Kukulska-Hulme and Traxler (2005), it nevertheless provides the general reader with the opportunity to acquire an overview of the main aspects of mLearning in one or two sittings at most. Of the book's eleven chapters, almost all of them are relatively short, the exception being Chapters 4, 5 and 6, which introduce a number of case studies in three areas: sales, services, and business processes and performance.

The first three chapters provide an overview of the potential of mobile learning, a review of the main technology and devices, and what the author calls the mLearning 'value proposition'. This term relates to a shift from training to a 'performance support orientation', a mode characterized by short-burst learning within a constructivist learning environment.

The short case studies in Chapters 4, 5 and 6 give some indication of existing projects using PDAs and smart phones. Chapter 4 presents information about the Vodafone Academy WAP Performance Modules, and 3Com University's use of a Palm for mobile learning. The case studies in Chapter 5 examine the Wireless e-Learning IP Troubleshooting Field Guide for the Palm VII and Valero's Mobile Procedure Access. Chapter 6 presents brief case studies on ALLTELL, QUALCOMM, Inc., Nokia Quality WAP Modules for Methods and Tools, and Unilever mLearning.

Chapter 7 examines the design principles that must be considered for wireless development in an instructional context. 'Anytime, anywhere' learning emphasises the self-directed and communicative aspects of learning. There are also a number of operational constraints, concerning for example, screen size, information volume, and the time-sensitive pressures of being mobile. Based on a number of projects, design teams should consider using modules that are short; offer structured information; have easy navigation and familiarity; and present reusable content. Metcalf identifies the use of the 'inverted pyramid' principle to structure information according to the notion of 'performance orientation' rather than 'exhaustive information' (2006:82-3). The pyramidal structure, based on a principle similar to stacks of interconnected minicards, means users can use a familiar system of hyperlinks to gain access to information, each time at an increasingly higher level. Information for the screens was visualised using a 3 x 5 inch (8 x 13 cm) index card, cut into quarters. In addition to these measures, the chapter discusses the centrality of using mobile devices to enhance connectivity and collaboration. The personalisation of mobile devices with key user information, combined with the development of location awareness technology, make them powerful instruments for instant information access.

Chapter 8 describes the current multimedia potential of mobile devices. In particular it focuses on an overview of the most prominent authoring tools for developing multimedia on a mobile platform including HTML, WAP, Lectora, Adobe Acrobat, Microsoft Mobile SDK, Palm WCA, Java BREW/J2ME, RIM Blackberry Java Tools and Macromedia Flash. Common modes of delivery are also briefly summarised, for example, Flash Lite, Pocket Internet Explorer (PIE), Microsoft Windows Media Player, Audible, and Vector Graphics.

Chapter 9 discusses how companies can combine learning and performance to provide mobile-based services, especially in the area of Customer Relationship Management (CRM). Solutions are discussed for one of the major problems that current mobile technologies present, namely, their inability to deal with large amounts of data. Another focus is the potential offered by mobile devices with location-awareness, particularly when integrated into business processes such as quality inspection or reviewing inventoried items via wireless devices with next generation RFID (Radio Frequency Identifier).

Chapter 10 presents examples of two of the main trends in mobile learning: synchronisation and voice-based access to data content. Synchronisation refers to the ability to have the same data available both locally (desktop) and while 'on-the-go' (mobile device). The ability to combine these features will be central to making mobile devices as powerful as desktops in the years ahead. Similarly, while voice and data used to be separated, a case is made for the development of next generation mobile devices to integrate them, therefore enabling more effective data transmission.

In conclusion, Chapter 11 presents a range of mLearning implications for next generation technologies. The most prominent examples are: location-aware learning, augmented reality, mobile collaboration, mobile gaming and simulation, and expert location. The background to many of these developments will be new attitudes that enable the integration of mLearning in peoples' professional and working lives. In addition, a survey is presented relating to the potential of eBooks using mobile devices, developments in handtop computing, wearable computers, iPods, and mobile gaming.

The book is surely correct to argue that a fundamental shift in learning and therefore teaching styles has to take place in order to fully exploit the new mobile technologies in instructional contexts. While the book has evident deficiencies – no consistent use of references, quotations not identified by page number, at times a rather inadequate layout – its 157 pages present a timely overview for trainers in the corporate sector, precisely because of its appeal to the generalist rather than the specialist.

Metcalf, D. S. 2006, *mLearning: Mobile Learning and Performance in the Palm of your Hand*, Amherst, Massachusetts, HRD Press Inc. \$19.95 (paperback), pp. viii + 157. ISBN: 0-87425-906-1.

Reviewed by Michael Thomas, Associate Professor, Nagoya University of Commerce and Business, Japan.

Useful Links

mLearn Conferences <http://www.mlearn2006.org>

United Nations World Summit on Information Society <http://www.itu.int/wsis/>

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Interview

Why blog together? An interview with James Farmer

Interviewer: Jo Murray

Jo: Welcome to The Knowledge Tree Everyone, today we're speaking with James Farmer. James is an education designer with Deakin University...welcome James.... thanks for speaking with us.

James: It's a pleasure... thank you for inviting me along.

Jo: Now you've been writing about educational issues, um... through your blog, incorporated subversion, for some time...so tell us what it's like to be part of the blogosphere and why do you do it?

James: Aahhh...well that one goes back a long way actually, to, I think, my time at RMIT when I was working at their, RMIT Training, their private arm as a Flexible Learning Coordinator of their English language courses.

Jo: Right OK.

James: I was interested in how I would get students to keep effective reflective journals and a lot of ideas were being bandied about, about how it might be done online and somebody who's now a good friend, but who was working as a contractor at the time, a guy called Lynden Parker, suggested blogs. And I thought 'Well that's wonderful!' And as it happens it's a terrible use of weblogs, (laughing) but at the time it was really interesting arena and interesting one to explore and I felt that I would being a little bit hypo.....hypocritical if I didn't practice what I preached.

Jo: Ah OK.. so that started you on the blogging track...

James: Yeah, I figured that I might as well give it a go and see what happens and before I knew it I was surrounded by people thinking about similar issues, similar areas. I stumbled across an international community of education professionals in this field.

Jo: So um I'm fascinated by the possibilities of the comments features and the trackback features in blogs. But I am not sure that I really understand how they help you to interact in the blogosphere and I am also wondering about what value that those particular features of trackback and comments add to your own blogging practice. So can you tell me a little bit about that?

James: Yeah certainly, um well I guess the idea of people being able to comment and discuss is nothing new. Discussion boards, chat room and you can use an email list... but for me the most significant thing about web logs and blogging software is that they allow for a conversation to be centred on the individual who is posting into that area. So I am writing something and this is my space and you are coming in and you are making a comment on it. Or you are writing a post on your site and that's making an automatic trackback link to that particular post. And that to me is a much more conducive and organic model... it's much more natural like real life, for communication, than these discussion boards or email group spaces where there is kind of like a... almost a false utopia of everybody participating on an egalitarian level of communication. It doesn't happen. It reduces into flame wars or places where people are just sending out conference announcements or variously unsuccessful

attempts at discussion and constructive education in many, many, many online courses.

Jo: *Hmm...OK and you ...so you find that using blogging software is better for your teaching practice?*

James: Oh absolutely, absolutely. I think that when you, as a teacher, especially if you are a teacher who is following a blended or fully online teaching course, are able to present yourself as a real person, through the use of a web log, then you are able to have a much more powerful significant impact. You are also able to drive discussion in a much more effective way than if you were, say, just another participant in a small discussion board somewhere.

Jo: *OK...so you have established edublogs.org a space where anyone can set up a free blogging space based in WordPress software, to use with their colleagues or their learners or their family or you know.... what drove you to set up edublogs?*

James: Ah...uh ... frustration actually..probably in the first instance. I guess I was working in a large university ,a organisation very difficult to get things done, get things through, and change, but I wanted to explore this software and how teachers and learners could use it and um I needed to find a way in which I could provide these tools for people. So I started off setting up my own server, and hosting and figuring out how to install sites and stuff and that took an awful, awfully large amount of time if you can imagine how there's like 20-30 people making a request to set up a web log then it takes a lot of time to do that. And then I stumbled across, um ... stumbled across is probably the wrong word I had been searching for a long time an excellent multi user blogging tool in WordPress Multi User and that started off as Insub blogs and insub.org being my home area and then kind of expanded into edublogs.org which now has partners in learnerblogs.org, ESLblogs.org and uniblog.org which the last one being college to university students rather than any gender reference...

Jo: *Aha...yep...and so what sort of response have you had?*

James: Oh its been enormous its been huge...ah ...we started out in August of last year and certainly before the end of this month May 2006 we are going to pass 10,000 different blogs at edublogs.org.

Jo: *OK...*

James: We have got over 5000 people using learnerblogs.org couple of thousand using uniblogs and the baby the family eslblogs.org with a couple of hundred, but I am sure that will grow over time. It's been a fantastic response and but what really interests me is I guess I started off with a kind of utopian ideal, thinking 'wouldn't this be great? Here is this community where everyone can participate, and share and talk to each other and all these things' and I have actually discovered that's not really the case. People like having the tools, they like having the tools in a contextual educational framework because we are integrated with other software like Chalkface project in the UK who provided us free assessment tools and Wiki spaces who provide a ad free wikis, so people love having the tools to use in their teaching and learning and quite often their institutions or their schools or organisations can't or sometimes won't provide them for them.

Jo: *Great...so now that you have helped The Knowledge Tree move into blogosphere what benefits do you think it will bring to our e-learning community?*

James: Well...I mean, I think it will be very interesting to find out. It's hard to second guess these things you know what is going to affect and what isn't going to affect and I would like to think that the ability obviously for readers to participate in the conversation to discuss and explore topics on *The Knowledge Tree*, with authors and with other readers, hopefully will be really valuable. I would like to think that the subscription mechanisms by RSS and also by email will allow a lot of people to stay up-to-date and to stay in touch with *The Knowledge Tree*, on an as quickly as possible basis. I also would like to think that the semantic personal publishing platform behind it will save you time Jo...

Jo: *Oh, yes it's always going to be good isn't it...(laughing)*

James: It will free up some time for you to do the important editorial work that you do rather than coding metadata and....

Jo: *OK...well...yeah that will be a welcome. Well, thanks very much for speaking with The Knowledge Tree James we will look forward to talking more with all our users and readers.*

James: It's a pleasure, thanks very much.

mLearning: a future of learning

Abstract

Technology trends over the last decade have pushed the boundaries of societal mobility. People are more connected than ever before and there is an ever increasing attraction to portable technologies. Technology is in constant evolution and change which is driven by the wants and desires of today's community which is attracted by its capabilities, uniqueness and convenience.

The first part of this article looks at the last decade of mobile technology and learning to the present day, the current technological trends impacting on today's society and hints at possible future directions. The article goes on to detail current issues associated with the uptake of mobile learning and suggests that there is a need for a planned and structured system that incorporates this technology into the day to day operations of learning organisations, from administration to learning delivery and from staff to learners.

It also examines a range of new technologies and innovations that will have exciting impacts on the way in which people receive and interact with information: all up providing new thought for learning delivery.

Introduction

The last decade has brought the first wave of the truly mobile generation, one built around mobile phones, Short Messaging Service (SMS) and portable electronic assistants, but now there is strong evidence to suggest that there is an even bigger wave to come driven by the increasing worldwide technological trend towards mobility and technology integration. This is evident through the plans and strategic directions of many of the major players in this field as well as the plethora of mobile technology types and commercial i-products that are becoming 'mobile ready'.

Towards the end of the 90s the potential of mobile technologies for learning became apparent and with the arrival of the new millennium a more mature face of mobile learning began to develop. Early articles discussed the potential of m-learning, as it became known, for 'lifelong learning' and emphasised the suitability of m-learning for '...situated, contextual and collaborative learning experiences' (Sharples et al. 2000:3). Mobile learning suited the flexible learning paradigm of anywhere, anytime and supported the learning fraternity's need to shift focus from a traditional didactic approach to learning delivery to that of supporting learning however, whenever and wherever the learner may choose. The high portability, user centred design, acceptable durability and potential network capability of the mobile equipment of the new millennium, meant that it had potential to fulfil the needs of emerging learning trends and in many cases could do this in a far more cost effective way than had ever been possible before. The age of m-learning had really begun.

In the face of all of this the international m-learning establishment needed to focus on collaborative international outlets for information sharing and the European Workshop on Mobile and Contextual Learning at the University of Birmingham, United Kingdom (UK), later known as Mlearn 2002, was initiated. Bringing together a small number of people from around Europe, it was the beginning of what has in later years become a highly regarded international m-learning event.

The development of networks and international collaborative associations has spawned many new opportunities for research and development in the fields of m-learning. The biggest issue with much of the research to date is that only a very small proportion gets an opportunity to be implemented in mainstream educational delivery. Keegan, at Mlearn 2005, noted that '...the trouble with projects is that they tend to collapse and disappear when the project funding is discontinued', adding that '...it is now time for mobile learning to emerge from its project status and enter into mainstream education and training' (D. Keegan 2005, pers. comm., keynote, 27 October). Keegan is one of a number of well respected international experts that feels that there needs to be more of an emphasis, by the technology manufacturers, on targeting education as part of their innovation and development.

The urgent need for mobile learning is to emerge from its fragile project status and convince the telecommunications operators that it represents a viable and valuable revenue stream (D. Keegan 2005, keynote, 27 October).

Another reason for the lack of uptake of m-learning in the mainstream is that although many of the worldwide projects produce outstanding results and in turn initiate further work and development, very little research has gone in to the development of any sort of whole of organisation implementation. What is needed is a structured framework that allows groups and organisations to easily initiate, develop and implement mobility within their existing structures and management hierarchies. This type of framework would have integration at its core allowing for the incorporation of mobile initiatives in a manner that becomes ubiquitous to the overall workings of the organisation. Currently we have a situation where there is enough evidence of product to begin individual forms of m-learning but very little is available as a structured process for integration as a whole. For many organisations still grappling with ongoing national change in the Australian training sector, including training package implementation, workplace learning and the ongoing administrative demands on delivery staff, it seems unlikely that they can take on emerging areas such as m-learning in any effective way, without definitive work and support. Additionally there is little understanding by many organisations of the best use of this technology to deliver and support learning. Facer et al. (2005) for example, state that '...although several initiatives are being implemented throughout the U.K., an underlying rationale for the use of these devices in education has yet to be articulated' (2005:2).

Facer et al. (2005), citing Ito (2005) raise concerns about the potential issues associated with existing conservative 'social and hierarchical' structures (methodologies/philosophies) in educational organisations, noting this can lead to situations where the technology is not used in open and 'naturalistic' ways. Learners are taught to use technologies in the 'school way' and if this '...remains unchanged, then the technology is likely to prove ineffective as a teaching and learning tool' (Facer et al. 2005:2).

Informative articles by Wagner (2005), Peters (2005) together with that by Facer *et al* (2005) provide an excellent introduction to mobile learning, its justification and potential impact. The aim of this article, however, is to acknowledge the rapidly changing face of mobile technology, its impact on the community and learning and to identify future directions that will be essential to the advancement of mobile learning within organisations.

Society and mobile technology: trends and directions?

China is often presented as an example of how fast mobile technologies are being accepted into mainstream society. Current statistics (Baijia 2006) indicate that the Chinese are purchasing mobile technologies at a rate well in excess of 100 million units per year. The figures also suggest that multimedia functionality such as Mobile Messaging Service (MMS) is becoming very important for social communications. In 2005 the Chinese went 'snap happy' using mobile phone cameras for Moblogging (see Useful Links herein for details), with an estimated 15 million bloggers throughout the country (Di 2006).

In Saudi Arabia due to the established Wahhabi religious faction and its strict segregation requirements, eating establishments go out of their way to create environments that prevent male and female guests from seeing or contacting each other. This makes socialisation for the young men and women particularly difficult using conventional means. Although most own 'state of the art' mobile phones, they prefer not to use the government controlled phone lines to casually communicate with the opposite sex, choosing, instead, to use the non regulated Bluetooth wireless communications. Users undertake a Bluetooth search of the immediate environment to see who might be available to talk, picking up on a 'contact' that attracts their attention (Abu-Nasr 2005).

2005 was a transition year for technologies, with influential organisations like Microsoft® launching a range of new concepts including its new Windows XP Media Centre Edition™ 2005, the system that pundits say promises to revolutionise the way in which consumers manage and use home information and communication technology (ICT). Marketed as an all in one entertainment system, it is certainly the first commercially viable attempt at a fully integrated ICT hub for the home. Media Centre Edition™ 2005 allows the user to store and manage a multitude of photo, music and video files, providing easy retrieval and customised playback. It also provides live and recorded television, movies and fully functional personal computer (PC) capabilities, all manipulated via one handheld controller. The system also boasts an interface that allows data to be easily 'synched' to and from a mobile device, allowing portable use beyond the fixed set up.

2005 also saw Microsoft® founder Bill Gates launch the new Windows® Mobile 5.0 operating system for Pocket PC and smart phones as part of Microsoft®'s vision for the future of consumer technology. The operating system is regarded, by mobile enthusiasts and programmers alike, as a substantial advance in mobile operating systems, with many forecasting a consequent boom in product development for mobile devices. Gates announced '...Windows® Mobile 5.0 enables our industry partners to develop exciting new hardware designs and solutions that will revolutionize how customers use mobile devices' (Microsoft®, citing Gates, 2005:para.3). Around the same time, a big step in portable gaming and entertainment, the Sony Play Station Portable, was released. Companies such as Toshiba and LG also released their first generation of Portable Media Centres (PMCs) which are essentially a mobile equivalent of the Media Centre PC.

There is an increased desire in the mobile community Internet access via mobile devices. The Spb Pocket PC Survey (2005) shows that 85% of users rate Internet access on a mobile device as very desirable and connect at least several times a day. In one recent British project, students Googled answers to questions via the Internet on their mobile devices; this immediate access and instant response was very attractive to them (Wishart et al 2005). Another aspect of Internet usage, in which there is a huge

movement towards mobile applications, is the development of personalised weblogs (online and editable journals) and wikis with over 60 million Blog's and personalised Wiki's worldwide in 2005 (Riley 2005).

Global Positioning Satellite service (GPS) has entered society in a big way, with many new cars shipping with GPS based mobile navigators as standard accessories. Early indications are that the portable devices are becoming popular with travellers, bush walkers and others wishing to engage with this unique technology in the field. The potential of this technology for interpretation resources and contextualised and situated learning has been known for a number of years (Ragus 2004) and its importance in these areas has been recognised with a number of significant Australian State players including government bodies, looking to incorporate GPS based initiatives into their organisational planning for 2006. There will also be some significant products launched in 2006 which will have educational focus such as Virtual Tour™ (See Useful Links for details).

Technological and organisational limitations

The incredibly fast rate of mobile technology development has its benefits and drawbacks. In some of the 'high end' models the benefits include wonderful gadgetry that can do almost everything except tie your shoelaces, which is great for the 'techno tarts' of the business world, but are they functional from an educational perspective? Most of the currently available mobile devices have been developed for the business market and more often than not have functionality not required by the learning sector. Their set up can be difficult and sometimes very time consuming for novices, with a teacher commenting... 'by the time I've connected it up, I can find something else to use (Facer et al. 2005:4).

Simple interface development, which allows users to get to what they need within one or two taps of the stylus, is needed. To date, the very popular Palm operating system has been the only product that worked on this basis. The simple and straight forward interface has been very popular in mainstream education, particularly in the United States, with many educational software applications being developed. The Pocket PC is only just starting to make an impact on this popularity. Older editions of the Microsoft® mobile operating system have not been so straight forward and this has led to a number of examples of third party quick launch software being developed, some of which is available as open source or freeware (See Useful Links for details of CLaunch 2004).

Microsoft®'s new Mobile 5.0 operating platform provides access to files through the 'today screen' via a quick launch area, and although this is a good first step, there is still work to do if it is to satisfy the education market.

In many cases there is very little information available to learning organisations on the most suitable mobile technologies for their needs. Most have to rely on information gleaned from research articles and practical projects put together by the 'trail blazers', however due to the small scale and specific (limited) requirements of these initiatives, they do not necessarily provide satisfactory answers for all situations. With the vast array of device types and the seemingly regular superseding of models, there is considerable confusion among learning practitioners and organisational management wishing to make purchases. For example, in 2005 Hewlett Packard Australia introduced a new range of models in its iPAQ range. Within a year many in that selection had been updated to support the release of the new Microsoft® operating system. With this degree of change it is not difficult to see why organisations are reluctant to move into this area. Many

organisations are now adopting a 'wait and see' approach, waiting for some form of stabilisation. Unfortunately this conservatism is likely to severely delay uptake of, and therefore progress in, this emerging field of learning.

If major mobile hardware and software developers continue to develop their product to target markets other than learning, we will still be discussing the 'pros and cons' of mobile learning well into the future. Consequent fragmented use in learning organisations by isolated proactive areas will limit m-learning's exposure and developments. Is it up to the technology firms to present the learning sector with the product or should the learning sector become more proactive and begin to lobby for what it needs?

Cooperatives, communities of practice and networks focusing on emerging technologies and learning need more encouragement and active participation across Australia. They are an essential repository for expert knowledge, assistance and communications and from this type of association comes progress, usually at a greater speed than what can be achieved by a single body. Organisations need to be aware that participation and involvement does not mean they lose their market share or give up their potentially wonderful intellectual property. In a well structured environment it is often a win: win situation.

For uninformed information technology (IT) purchasing managers the seemingly esoteric nature of the mobile device and the perceived lack of any real evidence for their practical application in a learning context, can bring about complications in communications with the teaching and learning team hit by 'techno fever'. These teams wish to purchase the technology to 'begin some flexible delivery' but it's often experimental and unproven, within their context, making it very difficult for them to argue their cases. In some situations, if a proposal is agreed upon, it can end up as a purchase of many differing devices, some with opposing operating systems and functionality. Ultimately this can set up a poor environment for the initiation of any viable or practical trials and waste money, because as knowledge grows, some devices deemed inappropriate are retired, as they become obsolete to the evolving situation.

Ensuring technology access for teaching staff has been a priority with many educational organisations around Australia over the last few years. While the dissemination of technology, such as desktop and laptop computers, to staff, is to be applauded, these programs often lack any structured professional development (PD) to back up what are, essentially, hardware roll outs. Although National and State funding exists, it is too sparsely available and due to requirements placed on its distribution, does not necessarily make it through to all the staff it should. It is very important that some form of substantive and practical PD should be directly tied to any hardware based integration.

When this situation is applied to mobile technology integration we often have a greater problem. Not only do staffs have limited opportunities to upgrade their skills, due to a lack of funds, but who is actually clued up enough to run the PD? After their difficulties in obtaining the equipment in the first place those entering the domains of the mobile technologies now encounter a situation where they are often required to train themselves, which in many cases leads to only a partial understanding of the capabilities and functionality of the equipment. This, in turn, limits how they use the technology and in some cases leads to a gradual drop in enthusiasm for what they see as the benefits of this technology to their practice.

Technology impacts, are we informed?

Hirsch (2005) believes that the education sector needs to put more effort into understanding the technological 'tools' that the current population is accessing in day to day life. He looks at current world wide trends in technologies and ponders why these developments are happening at all and why is it that the large companies that dominate this sector spend billions on these types of innovations.

Why did Texas Instruments announce the production of new chips that provide high definition television on cell phones? Why does Europe already have wireless video services that allow you to watch TV via your cell phone even as you travel? Why do students in Japan demonstrate that they can thumb keyboard at rates approaching a traditional keyboard user? ...

...Why does a software application like CoffeeCup Wireless Web Builder exist to create web screens that operate in a cell phone size? Why does a website catering to cell phone users like WINKsite exist and continue to grow exponentially? Why have Nintendo and Sony introduced new game systems that have built-in ethernet wireless capability and Internet browsers, along with touch screens and USB ports? (Hirsch 2006:para.6-7)

There is no doubt that the learning sector has to ask are we informed? Why procrastinate with numerous articles that often repeatedly focus on what is m-learning, is it really happening and is it of any benefit? We need to move on and start to produce complete working models for organisations, staff and learners. These models should allow for automated, systematic solutions for day to day operations and delivery, from automated mobile data recording, such as roll and enrolment, through to resource and learning pathways. The greater plan would blend fixed technology infrastructure with that of the flexible mobile spectrum, connected through affiliated telecommunication infrastructure and wireless networks.

We need to incorporate the technology as a ubiquitous component of day to day learning. Whenever the learner needs to use the technology as part of their learning they should be able to access it. Currently we have fixed technological infrastructure, such as regulated computer labs, where access for learners is limited and 'just in time' learning essentially can't take place.

This type of environment tends to turn technology use into an event rather than treat technology as a tool to be used as necessary. Having technology in the classroom, ready to use at a moment's notice, makes it possible to move beyond learning about technology and get to learning with technology (Hirsch 2006:para.13).

There needs to be a better understanding, particularly within traditional learning delivery areas, that this technology is here to assist in, and be part of, a range of flexible delivery options. It is not necessarily here to take away from the traditional pedagogic methods, but can be a valuable and engaging addition. The United Kingdom (UK) Department for Education in its 2005 strategy for ICT delivery in learning (Dfes 2005) states:

19. We do not argue for a complete switch to new technology. Traditional pedagogy and e-learning can and should complement each other. The new technologies are capable of creating real energy and excitement for all age groups. Used well, they should motivate, personalise, and stretch (2005:6).

It is difficult to respond confidently, when asked to provide practical examples of how mobile technologies are being used in education and learning as part of 'real' programs as distinct from in projects or trials. Some seem to view the latter as having little consequence. To a certain extent that is understandable, as there is nothing like the real thing. But when we look at practical examples, there are some wonderful uses in the Kindergarten to Year 12 (K-12) sector around the world (Intel Education 2005) (See Useful Links for details). However examples are not as easily found in the Vocational and Technical Education (VTE) sector and in particular in workplace delivery. This is by no means a reason to suggest that there is no place for m-learning in this area; in fact many would argue that the VTE area has greater potential for m-learning than K-12 application. The situation is simply that due to the early stage of this type of delivery, there is just not enough demonstrated work coming through and being exposed. In many circumstances this situation leads to a 'Catch 22' where the lack of examples brings about reluctance to move ahead and a lack of any move, brings with it a lack of examples. Hence it is not surprising to hear managers of learning institutes say they will move once they see that industry is engaging this technology for learning.

The learning

SMS, blogs, wikis, live messenger services such as MSN Messenger™, mobile multimedia posting, as in moblogging and image viewers like Flickr™ are some of the many communications environments that have grown enormously over the last few years. Users become involved in experimenting, collaborating with others and using new techniques and methods. The learning takes place through this communication, collaboration and experimentation and in turn they develop new ways of using these environments to best assist themselves and others.

Sharples et al. (2005) describe learning as a 'labile process' constantly open to change and adaptation, 'mediated' by knowledge and technology in supportive teacher, learner and peer relationships.

The mediation can be analysed from a technological perspective of human-computer interaction, physical context and digital communication, and from a human perspective of social conventions, community, conversation and division of labour. These two perspectives interact to promote a co-evolution of learning and technology (Sharples et al. 2005:8)

The essence of this emphasises m-learning as part of a 'task model' (Taylor et al. 2005) and is based on two domains, technology and the human/social. The authors state that the two domains affect each other, therefore if one changes it will have impacts on the other.

The worldwide move towards wireless networks will have a substantial impact in the way in which we use mobile devices for learning, with communications and collaborative associations playing an ever increasing role in the way learning is enacted. Access through what is referred to as 'micro mobile' networks, those within campuses and organisations, will dominate, allowing learners to be 'accessible' whenever they wish to be. Learning in this situation does not have to be connected at all times, as is the case with a number of standard e-learning concepts. Learning materials can be incorporated as accessible chunks, with resources interchanged with existing management systems via networks. World Wide Web accessibility will be essential to these 'micro mobile'

networks and more web centred learning will open up collaborative networks from a local to a truly international level.

In regard to the future of learning resources, Reynolds (2005) states that there is '...an increased need for standards-based, portable content that can be reused in multiple environments and for different pedagogical purposes' (2005:para.4). He emphasises the need for publishers to focus on 'granular' and highly 'portable' content that can be used and repurposed easily and suggests that '...publishers can succeed by building teaching templates or "how-to" models that can be reused in multiple platforms' (2005:para.4). Additionally he argues that current Learning Management Systems are still not meeting the varied needs of educators and that portable learning environments, those contained on mobile devices, could '...address these limitations by distributing part of the learning load to the users personal machine' (2005:para.4).

Innovations that will make an impact

Portable Personal Learning Environments (PPLEs)

Portable Personal Learning Environments (PPLEs) are environments made up of one or more portable applications that can be loaded onto a number of varying mobile devices for example, from memory sticks and to personal digital assistants (PDA) and mobile phones. The concept comes from current research that works on the premise that standard college based Virtual Learning Systems (VLEs) are not providing learners with what they need. The current VLEs do not allow for easy customisation or contextualisation for learners. It is argued that if a learner moves to another training organisation with a different VLE, he/she will need to adapt to another new system, in turn delaying their actual subject learning (Liber 2005). Liber (2005) states that with Personal Learning Environments, '...[i]nstitutions would still provide content via repositories, undertake assessment and so on, but learners would interact with these using their personal systems (Personal Learning Environment), comprising their preferred tools and ways of working (2005:2).

Although there are still issues associated with this type of system on a mobile device, including compatibility with the operating system and encryption, the primary aim would be to have a completely secure mobile system that could run remotely from a centralised, standard VLE. This system would be made up of tools, resources and activities that the learners would be comfortable with, accessed through a simple user interface.

Hypothetically speaking, the benefit of systems such as these is that they could be preloaded onto an array of standard memory card devices and configured to run on specific machines. Once the memory card is loaded to a device, the interface becomes available through the front screen of the device. All activities for a specified length of time could be incorporated onto the memory card and the activities and assessments completed by the learner, returned to the card. Cards can then be interchanged with the educational institutes or card information exchanged via remote or standard synching procedures.

Currently PLE's are only just emerging and there is still a lot of work to be done. However, there are a couple of interesting examples available worldwide including the 'Interactive Logbook' from the Centre for Educational Technology in Birmingham (Corlett et al. 2005).

Radio Frequency Identification Tags (RFIDs)

Smart tags such as Radio Frequency Identification tags (RFIDs) (See Useful Links for details) have the potential to revolutionise the way trainers deliver both workplace and college based learning. The technology is based on small microchip embedded tags, some as small as a few millimetres in width, that can hold electronic information. This information can then be recalled through a prepared reading device such as a mobile phone, a Pocket PC or PDAs. The process works by the transmission of information via radio waves from the reader to the tag and back again, this receiving and transmitting of information made possible through miniature embedded antennae in the tags.

The tags and reading devices can be used in a number of ways to provide a means of information storage and dissemination with up to 1 megabyte (MB) of storage available on some tags. The tags themselves are relatively inexpensive and can be easily be mass produced depending on their type and use (Ragus 2005).

Major manufacturers, including Nokia, Phillips and Sony, have been focusing their attention on the development of RFID based mobile technology, with Nokia releasing a series of RFID enabled mobile phones with in built read and write capabilities. This essentially means that the information can be both written to the tag using the mobile phone and then read back from it. It is estimated that half of the world's phones will be RFID enabled by 2009 (RFID Journal 2005).

Innovative methods for using RFIDs in learning include unique, 'just in time' learning for individuals in bite sized chunks of stand-alone information, like text and voice files, which can be incorporated into smart tags and then attached onto inanimate objects such as machinery, first aid kits, tools, etc. This concept would essentially bring the equipment to life with the equipment 'talking' to the learner through the learner's tag reader device (phone, PDA) and providing him/her with the information he/she needs, perhaps to undertake an equipment start up safety check or to provide advice on using a roller bandage for a spider bite. There are numerous possibilities (Ragus 2005).

The infrastructure required for these systems is relatively cost effective and standard information formats such as text can be easily updated and contextualised by staff with minimal experience. More complex systems that incorporate voice or other multimedia formats are in development and it is envisaged that we will see results of these by the end of 2006.

Global Positioning Service (GPS)

As mentioned earlier GPS products have made rapid inroads into society over the last few years. With improvements in technology and the miniaturisation of components, we now have GPS devices that can fit in our hand, that only one year earlier required bulky apparatus carried in a backpack. Their accuracy and coverage have also improved significantly now having a pick up range within only a few meters and engagement even within some internal environments; aspects not possible only a few months earlier.

Their use for situated learning and interpretive resources has been suggested for a number of years but there has been very little product specific for this purpose. In 2005 the Context Aware Educational Resource System (CAERUS) project, for outdoor tourist sites and educational centres, based at the University of Birmingham, developed a

prototype of a GPS interpretive resource for use in the University Botanical Garden. It proved popular and development is continuing (Naismith et al. 2005).

The 'Virtual Tour'TM (See Useful links for details) is a new product developed by Daniel Dacey of New England Computer Solutions here in Australia. It aims to provide a user friendly interface that allows trainers to develop their own virtual tours based around any outdoor location. Information such as voice, video or other multimedia products can be incorporated and it also has a database functionality giving it the ability to store an enormous range of tours and data. The product is to be used in conjunction with field study (for example in science, armed forces, fishing industry, mining or tourism contexts) and allows the user to engage in a range of activities in actual situations. Learners can be individually tracked and assessment activities can also be completed through the device.

This product promises to revolutionise the way in which we deliver learning in the field and will provide numerous options for trainers to develop engaging, interactive and informative learning.

SMS Casting Service

During the Mlearn 2005 conference in South Africa, Alan Munro, South African director of fifth digit mobile concepts presented a paper on mobile language application for the delivery of language courses through a mobile phone. The concept has its base in new SMS technologies that allow written content to be delivered to mobile phones via an SMS portal. He feels this system provides a new and very flexible approach to the delivery of this type of learning, stating that '...what makes this product unique is that it allows the learner to decide when and how frequently they receive the lessons' (A. Munro, 2005, pers. comm., poster, 26 October). The organisation is also working with some innovative podcasting technologies and the use of podcasts through Mp3 enabled phones.

An innovative company here in Australia with an incredibly similar name to the above is Fifth Finger. They have launched a product called air-castTM Self Serve and although it has been aimed at the business sector it certainly has lots of potential for the education market. They describe the self serve part of this product as '...a web interface which clients use to instantaneously create and launch a range of SMS services based upon a predefined set of business rules' (Fifth Finger 2006:para.2).

The interface is straight forward to set up and has a set of options that allows the user to develop a complete SMS portal that can, with some lateral thinking, be set up as a student survey tool, formative assessment area, student knowledge trail and lots more. It essentially works on the basis that the information the learner requires is added by the trainer to an SMS generating database via their desktop computer. This information can then be accessed through most mobile phones by way of a trigger code sent to an assigned phone number. Issues with this system are still primarily associated with the cost of the calls and who pays. Access to the web interface is costed by the company as a monthly fee.

The other interest for many of the innovators in these technologies is the enormous future potential of the 3G platform and its possibilities for the multimedia arena, in particular the transmission of television and video through mobile phones. Known as the mobile broadcasting revolution this is an area that the learning sector needs to keep a close eye on.

Gaming

Numerous initiatives both in Australia and internationally have demonstrated the fundamental benefits of learning through gaming. A number of these initiatives have spawned the development of products that allow gaming resources to be delivered through mobile devices. One of the most captivating of these products was recently presented at Mlearn 2005 by Geoff Stead, director of Tribal-CTAD in the UK, an education and empowerment company. Known as MobiBuild™, it is only available as a beta release and is currently being tested around the world including by a team headed by Caryl Oliver at William Angliss Institute of Technical and Further Education (TAFE) in Victoria, Australia. The product provides a straight forward interface for the development of learning resources that can then be used on mobile devices and is certainly an excellent taste of what is to come. Further detail on this will be available later in 2006.

Gaming has the potential to add significantly to the mobile delivery mix, as it provides an actively engaging and interactive experience for the learner. It also takes advantage of the ever developing market of mobile gaming machines such as the Sony Playstation Portable™ and the new generation mobile phone platforms. This concept opens up opportunities to engage learners in a way that traditional approaches can't. Some interesting observations from the gamer generation indicate that, when gaming, gamers are always the stars of their games, they are always aware that there is a solution to their game and that failure is a part of finding success (Trendwatching.com 2005).

Mobile administration and documentation systems

Paperwork (traditional hardcopy), is one of societies biggest issues. It's bulky, difficult to transport in quantity, easily damaged or lost and has environmental impacts, but it is a fact of life and society is based around it. In educational circles paperwork is an essential part of most activities from enrolment and sign up processes to final results and certification. Educators spend much of their time actually managing paperwork.

When the electronic age dawned, we were promised of the so called 'paperless' office. It never came and realistically it's still a long way off. However with today's mobile technology we are just that one step closer to that 'holy grail'. With this technology we have the capacity to carry around a virtual library of electronic documentation in our pockets at an affordable rate. Have you come across the delivery man that uses a PDA instead of a delivery book? It can seem strange signing a PDA screen but it is an indicator of how far we have come. In this case the delivery man's PDA data is downloaded regularly through remote synching and the information is then sent through to the organisations management system. We are now running these systems, why are we not doing the same in the learning sector?

The potential to do so is with us and is now being used by a handful of progressive schools in the US. They run mobile programs using software known as PAAM™ which is produced by GoKnow® educational software, the system allows the student to access resources and then send completed material, assessments etc back to a server where the teacher can then access it for evaluation. See Useful Links for details.

New and exciting products are becoming available on a regular basis. One such advance is a recent Australian Flexible Learning Framework, New Practices Project that has developed the world's first QTImPlayer - the only mobile accessible player of QTI compliant documentation. The QTI or Question and Testing Interoperability is an

international standard in keeping with the range of IT standards such as IMS and SCORM. Products produced to this standard can be used on any other QTI standard compliant system. The QTIPlayer is also capable of being introduced to any IMS standard system. The QTI system, as designed for the project, allows for the rendering on mobile devices of QTI text based assessments. The development was trialled for the mobile device using Microsoft® Windows® Mobile™. Assessments for learning, including performance, maintenance, checklists, can be completed on the mobile device by an assessor or learner and results (in this case the QTI data package) saved to the device, all within a secure access shell. After the success of the trials the lead research organisation, the Institute for Working Futures, has finalised a Redoit™ solution that not only converts or writes QTI 2.0 assessments, but can also enable the assessments to be imported into learning assets, that can be saved as SCORM 2004 packages, while at the same time ensuring the assessment can still be rendered on a mobile device. The future development of this system is to ensure the 'data package' can be synched, through any network, back to a central management system or database (Bowles et al. 2005).

Conclusion

Stead from Tribal-CTAD stated that '...the question is no longer whether m-learning works, but rather how best to fit it into your blend' (Stead 2005:1).

We need to focus on initiating programs that incorporate mobile technologies into the mainstream of educational delivery. The technology is available and in great demand by current generations. In the world today it is obvious that the technology and human social domains are affected by each other. In the context of learning and technology it is often said that there is too much emphasis on the technology and not enough about the learning. Of course there is an obvious requirement to ensure that the learning needs are addressed, but at the same time we should not dismiss the potentials of the technology just because it is new and perhaps unproven for learning. We have a large part of society that thrives in the social benefits of technology every day, yet in the field of learning we are still grappling with the basics of technology for learning delivery. Are we still trying to 'educate' our learners based on old methods of delivery that are uncomfortably repackaged and delivered using the 'most trendy' technology of the day?

Technology is in constant evolution and change being driven by the wants and desires of today's community, which is attracted by its capabilities, uniqueness and convenience. Its designs are directed to the taste and individualism of the generations' increasingly egocentric lifestyles. This period could be described as a conveyor of constant development and technological adaptation and we as learning practitioners have an opportunity to be part of it and not just watch it from the sidelines, waiting until it's the 'right time' or when it 'matures'. When will that be? Good teaching practice is creative and provides energy, excitement, inspiration and enjoyment; ingredients that are essential for learning to happen. The adaptation of society's well used and attractive technology to a learning context has enormous potential for the quality learning practitioner's kit of creative practice. However to make this happen we need a planned and structured system that incorporates this technology into the day to day operations of learning organisations, from administration to learning delivery and from staff to the learners.

I have already mentioned the need for resource development for mobile devices and in particular the need for instructor or subject expert led product. Therefore, processes are needed that allow users to quickly produce or contextualise resources in a simple, quick and cost effective way. Templates and construction wizards are probably the best

options for this, where the user can add details in a step by step process; ending up with a final product relatively quickly. Additionally there is room to explore existing programs within organisations and their standard computer operating systems, such as creative applications of Microsoft® PowerPoint™ and Word™.

The engaging concept of digital stories (Jay 2005) has proven to be a very effective resource development initiative. In Australia there has been some excellent work undertaken using simple and straight forward software such as Microsoft® Photostory™. The digital stories provide learning resources in an engaging and entertaining manner and they can be easily transferred to play on a Pocket PC.

Product innovators are now aiming their development towards software that is more intuitive and straight forward to use and over the next few years there will be a strong push towards product that is mobile compliant and/or provides mobile compatibility..

If we reflect upon the changing nature of learning delivery particularly in the VTE sector, there is an increasing need for more creative and flexible delivery mediums. We need to be proactive in these activities and move on from debate into action. M-learning certainly has the potential to provide solutions to some of our current delivery dilemmas but it has also provided us with the opportunity to reassess what is meant by, and wanted from, learning in the modern age and how this impacts on the way in which learning is delivered to future generations.

Useful Links

CLaunch, <http://pachome1.pacific.net.sg/~welic/claunch.html>

Fifth Digit Language Podcasts <http://www.5thdigit.net/index.html>

Fifth Finger <http://www.5thfinger.com/corporate2/default.asp>

GoKnow Educational software <http://goknow.com/>

Handheld Computers in Education

<http://magazines.fasind.com/wwwtools/m/2737.cfm?x=0&rid=2737>

Intel Education <http://www.intel.com/education/sections/section1/index.htm>

Mlearn 2002 <http://www.eee.bham.ac.uk/mlearn/>

Moblogging <http://en.wikipedia.org/wiki/Moblogging>

TrendWatching <http://www.trendwatching.com/>

Tribal-CTAD <http://www.ctad.co.uk/index.html>

New England Computer Solutions <http://www.necs.info>

[Radio Frequency Identification \(RFID\) tags](http://en.wikipedia.org/wiki/RFID) <http://en.wikipedia.org/wiki/RFID>

RFID Journal <http://www.rfidjournal.com/>

Virtual Tour™ <http://www.necs.info>

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Peer reviewed article: Surveying online technology: A matter of design

Abstract

This article argues that previous attempts to survey the use of technology in vocational education and training in Australia have been based on broad descriptors such as online learning and e-learning. These lack definitional clarity rendering the results open to wide interpretation. The article reports on the development, administration and analysis of a survey to determine the frequency of use of 21 functionalities by 116 vocational education and training teachers. As might be expected, some functionalities are used more frequently than others. The article explores the patterns of use frequency and proposes that the criteria of newness, complexity, compatibility and locus of control are influential in determining how frequently the respondents use e-learning functionalities.

Introduction

Established in 2000, the Australian Flexible Learning Framework's 2000-2004 strategic plan stated that by 2004, Australia would be recognised as a global leader in applying new technologies to vocational education and training products and services (Australian National Training Authority 2000). The most recent business plan for the Australian Flexible Learning Framework describes its purpose as '...[t]o increase the sustainable uptake of quality e-learning in vocational education and training' (Department of Education 2005:3). In order to achieve this aim, the use of technology will need to be systemically embedded into the teaching practices of vocational practitioners. Assessment of this outcome requires data related to the frequency of use of technology for teaching and learning purposes.

Early surveys of the uptake of technology in vocational education and training suggested that adoption rates were less than 2.5% (Hill et al. 2003; National Centre for Vocational Education Research 2002). General critiques of these studies identified definitional confusion, a lack of reliable data and methodological differences as causing difficulties (Brennan, McFadden & Law 2001; Cashion & Palmieri 2000; Kilpatrick & Bound 2003).

Terms related to online technology in education are often used interchangeably (Booker 2000). Even single terms such as online learning and online delivery are subject to multiple definitions and interpretations (Brennan et al. 2001; Hill et al. 2003). Recently the term e-learning has emerged. Here again there is a lack of definitional clarity. Some limit the scope of e-learning to the use of networked technologies and the Internet (Garrison & Anderson 2003; Gillani 2003). Others define e-learning as a broader notion to include both networked and non-networked technologies (Australian National Training Authority 2003; Bowles 2004). To add further confusion the term blended learning (Bersin 2004) has become more common in reference to the use of online technology in teaching.

The most recent national survey of technology uptake in Australia, the *2005 E-learning Benchmarking Project* used a broad definition of e-learning as '...access to, downloading and use of web, CD-ROM or computer-based learning resources in the classroom, workplace or home' (I & J Management Services 2005:5). It is reported that 60% of 478

vocational teachers across Australia have used e-learning in the last 12 months and surveyed the use of a range of functionalities as summarised in Table 1.

E-Learning Functionalities	Reported Use (%)
Online access to/downloading of learning materials and resources	63
Electronic submission of work	61
Use of multimedia interactive learning resources in the classroom	50
Online access to and participation in course activities	45
Remote use of multimedia interactive learning resources	42
Structured learning-based email communication	36
Online assessment activities	34
Posting messages to a group through online bulletin board	33
Using Flexible Learning Toolboxes	31
Online group discussion	27
Online simulations	20

Table 1: Reported use of e-learning functionalities in the last 12 months (I & J Management Services 2005)

Whilst the *2005 E-learning Benchmarking Project* provides some useful data, the project survey's use of a broad-based definition of e-learning renders the results open to wide interpretation. The survey has the following limitations.

1. Frequency of use is not evaluated. The collection of data on teacher's use of e-learning is defined as a single use in the last 12 months. If one is attempting to identify the systemic embedding of technology in teaching such a figure is of little use. For example, it could mean that the 60% of respondents have used a single aspect of e-learning once in 12 months.
2. Some functionalities surveyed require significant interpretation on the part of the respondent. For example, information is collected on the 'Use of multimedia interactive learning resources in the classroom' and 'Online access to and participation on course activities'. These are broad concepts that lack specificity.
3. Only a yes/no option is provided in respect to use. It is not possible for the respondent to indicate that they are unsure.
4. The survey collects demographic data related to gender, age, State/Territory and main field of vocational and technical education (VTE) teaching. Given the diverse nature of the VTE sector and the range of employment modes, the addition of further demographic descriptors such as years in teaching, provider type, primary mode of teaching and level of technical skill would allow more detailed analysis according to demographic segment.

This article reports on the use of a survey to determine the frequency of use of 21 functionalities in the Australian Flexible Learning Framework's 2005 Networks Community Forum (hereafter referred to as the Community Forum). The Community Forum aims to establish '...sustainable professional learning practices within an environment of online networking, knowledge sharing and knowledge management' (Australian National Training Authority 2004:22). It is made up of over 500 participants mainly working within the Australian VTE system with others from universities, schools and industry. There is a small group of international educationalists.

The following section describes the design, administration and analysis of the survey. Factors that influence the levels of use of the various functionalities are explored and four criteria are proposed.

Survey design and administration

An online survey was made available to vocational practitioners registered with the Community Forum in November 2005. Members were forwarded an email inviting them to participate in the survey and Internet links were placed on the Community Forum website. The survey is divided into three sections. Part one offers the opportunity for the respondent to identify themselves by name and email address. Of the 136 people who responded 85 (62.5%) provided their name and 81 (59.6%) provided their email address.

Respondents were asked to indicate if they were employed in a teaching role which was defined in the instructions to the survey as follows:

- interaction between teacher/trainer and learner(s), may be face-to-face, at a distance or in combination
- the use of networked technology for learner support, teaching or assessment
- networked technology implies technology that is linked to an intranet or the Internet i.e. NOT stand alone computers.

In order to gain access to the second part of the survey, respondents were required to identify themselves as 'teachers'. According to the three descriptors above, a positive response indicates that the respondent considered they were engaged in interaction with learner(s), and used intranet or Internet based networked technology to support learning, teaching or assessment. Of the 136 people who entered the survey 116 (85.3%) indicated that they had a teaching role and were given access to the second part of the survey. Those who indicated that they were not involved in a teaching role were thanked for their assistance and refused entry to the remainder of the survey.

Part two of the survey collected demographic data relating to: time fraction involved in teaching; place and location of employment; primary mode of teaching; gender and age; years of teaching experience; level of technical skill; and primary vocational discipline area. These data provide the opportunity to analyse the frequency of use of online functionalities according to demographic categories. The data are reported here but no attempt is made to realise the potential of segmented analysis.

Part three of the survey collected data related to the frequency of use of 21 online functionalities. These were derived from personal experience, identifying those functionalities that are known to be used by vocational practitioners or functionalities that are promoted for use through the Australian Flexible Learning Framework. Whilst there is a lack of definitional clarity in terms used to describe the use of online technology, the functional attributes for teaching are more readily identified. These include content presentation, communication, information seeking and construction of communities of learners (Gillani, 2003). Automated assessment is another functionality of technology that should be added. The functionalities surveyed are consistent with these categories and detailed in Table 2 (to follow). Respondents were able to indicate that they used the functionality daily, weekly, monthly, less than monthly, never or were not sure. The design of this part of the survey was based on the principles that the survey should list functionalities using language that would be familiar to teachers rather than technology experts, and frequency criteria that would resonate with the respondent group.

Findings

Demographic data

Using available 2002 data from all Australian States and Territories a national survey of the vocational and technical education workforce found that data was inconsistent between jurisdictions (NCVER 2004). However, using the available data it was broadly observed that Technical and Further Education (TAFE) teachers are composed of a roughly equal split according to gender. There are more part-time and non-permanent staff than full-time or permanent staff. Few staff are less than 30 years old, and between two thirds and three quarters of TAFE teachers are older than 40 years with a relatively even split between 40-49 year olds and 50+ year olds. More than 40% have been employed in TAFE for more than 15 years (NCVER 2004).

Between 108 and 116 respondents to the current survey provided details for each of the demographic criteria surveyed. This indicates that some respondents did not complete all questions. The data show that approximately 70% of respondents are employed in a TAFE organisation (public provider), approximately 16% in a private Registered Training Organisation (RTO) provider, the remainder (approximately 14%) in Adult and Community Education (ACE), a university or secondary school. The respondent group is characterised as follows:

- gender balance is approximately 60% male, 40% female
- approximately 40% of respondents are in the 40-49 year old age range and 40% are 50 years or older, the remainder (approximately 20%) are less than 40 years old
- approximately 45% teach full-time, 23% one day per week and the remaining 32% between two and four days per week
- almost 60% have been teaching for at least 10 years, 28% for 5-9 years and the remainder (approximately 12%) for less than 5 years.

Whilst only 70% of the respondents to the survey are TAFE teachers, at a broad level it would seem reasonable to propose that this respondent group is not largely dissimilar in demographic profile of the general TAFE teacher population reported by NCVER (2004) in relation to gender, employment status and length of employment.

The current survey also finds that approximately 63% describe their primary mode of teaching as face-to-face (possibly with some non-face-to-face), 23% as primarily non-face-to-face, and 14% as a balance of face-to-face and non-face-to-face teaching. The use of this data provides the opportunity to segment the survey findings according to primary mode of delivery but that is beyond the scope of this article.

The survey reveals that only 3.5% of the respondents indicated that they are beginners with the use of technology, the remainder were approximately equally split in describing themselves as intermediate, experienced and advanced in their level of technical expertise. General opinion would suggest that more than 3.5% of vocational teachers would rate their level of technical skill with online technology as a beginner. Given the common interest of participants in the Community Forum in flexible learning and the use of online technology, it is possible that the group may have a higher level of technical skill than the general population. As a consequence the results of this survey may not be entirely representative of the general vocational and technical education teaching

population. The survey does however demonstrate the potential of a survey approach that deconstructs technology based practices into functionalities.

Use of e-learning functionalities

Between 99 and 103 respondents indicated the frequency with which they used each of the functionalities surveyed. This means that not all respondents to the demographic survey also responded to the survey of functionalities. Figure 1 graphically depicts the frequency of use of each functionality in percentage terms. Table 2 summarises the frequency of use of each of the 21 functionalities from most to least frequency of use on a daily plus weekly basis.

These findings could be used to provide a benchmark against which future surveys are conducted. The data could also contribute to a consideration of return on investment for institutions that fund the development, implementation and maintenance of such functionalities. For example, the knowledge that Flexible Learning Toolbox products are used by approximately 19% of vocational practitioners on a daily or weekly basis may be of interest to government authorities that have funded the development of these products.

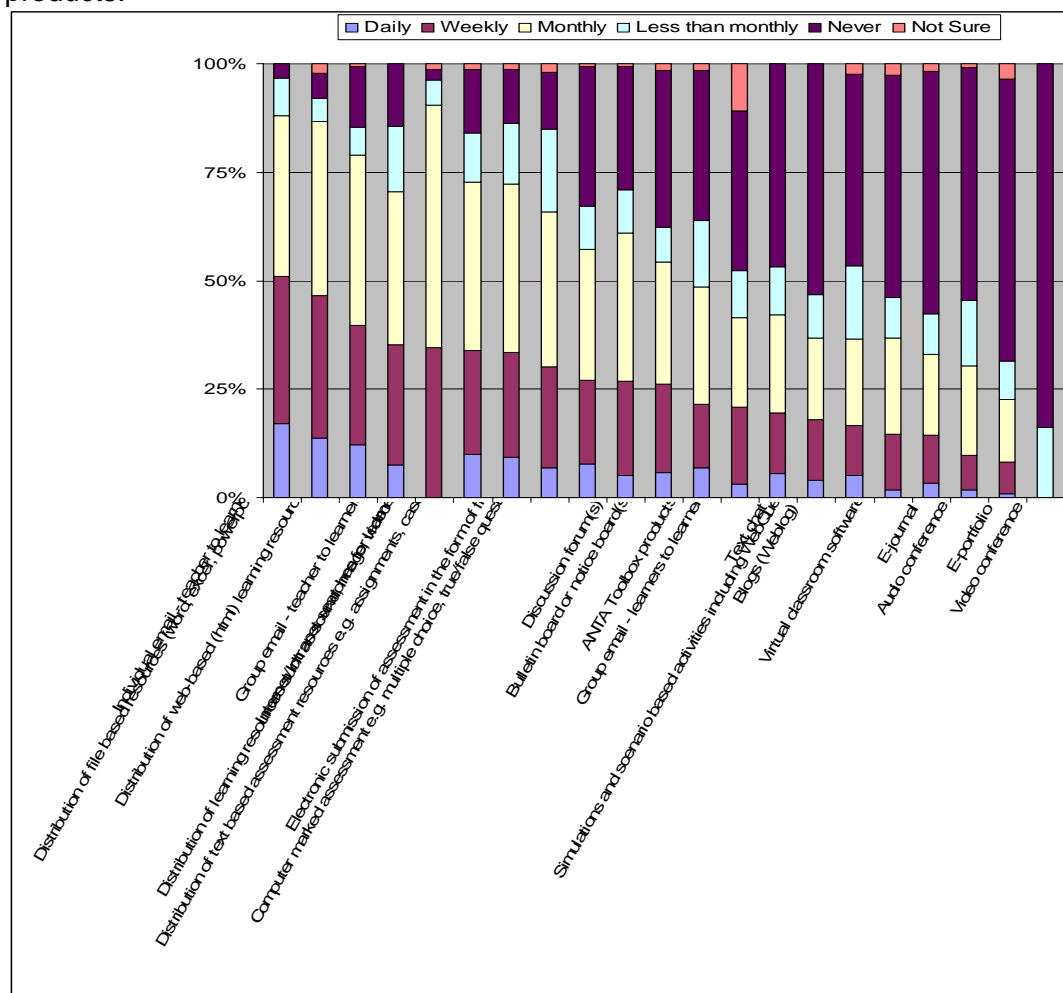


Figure 1: Frequency of use of e-learning functionalities

E-learning functionality	% of respondents using the functionality daily plus weekly
Individual email between teacher and learners	69.0
Internet/intranet for the distribution of learning resources as Word, Excel or PowerPoint files	61.2
Internet searches for learners to access information	52.9
Internet/intranet for the distribution of web-based (html) learning resources	45.6
Group email between teacher and learners	42.8
Internet/intranet for the distribution of text based assessment resources e.g. assignments, case studies	36.7
Internet/intranet for the distribution of learning resources as sound, image or video files	36.4
Electronic submission of assessment in the form of files	33.3
Discussion forums	29.7
Bulletin board or notice board(s)	27.4
Internet/intranet for computer marked assessment e.g. multiple choice. True/false questions	26.5
Group email between learners and learners	22.3
Flexible Learning Toolbox products	18.6
Text chat	17.5
Blog	17.0
Virtual classroom software	15.0
Internet/intranet based simulations and scenario based activities such as WebQuests	14.0
E-journal	12.9
Audio conference	8.9
E-portfolio	7.9
Video conference	0.0

Table 2: Frequency of use of functionalities (daily plus weekly).

The next section of this article explores the frequency of use and the nature of the functionalities surveyed to reveal criteria that influence usage patterns.

Factors influencing the frequency of use of technology

Rogers' (1995) in *Diffusion of Innovations* describes a general theory of innovation adoption derived from a range of traditions in sociology, health, communications, and economics. Rogers describes five innovation characteristics that influence the likelihood of adoption: relative advantage; compatibility; trialability; observability; and complexity.

1. Relative advantage relates to the perceived benefit that will accrue as a result of adoption in comparison to existing practices. The greater the perceived relative advantage, the greater the likelihood of adoption.
2. Compatibility refers to the level of congruence with the individual's existing values and beliefs, previously introduced ideas and compatibility with needs. The greater the compatibility the greater the likelihood of adoption.

3. Trialability refers to the degree to which experimentation is possible. In cases where it is possible to trial the innovation adoption is more likely.
4. Observability refers to the degree to which the result of adoption can be observed. The more observable the results the more likely is adoption.
5. Complexity, relates to the perceived complexity of the functionality. Innovations that are perceived as less complex are more likely to be adopted and functionalities perceived as more complex are less likely it is to be adopted.

In a more specific consideration of the adoption of information technology Davis (1989) found that 'perceived usefulness' and 'perceived ease of use' were significantly correlated with both self-reported current and predicted future use. He proposed that the perceived ease of use may be a causal antecedent to perceived usefulness (Davis 1989).

Common to the views of both Rogers (1995) and Davis (1989) is the notion that the adoption of technology is influenced by the individual's perception of the technology. That is, the technology is more likely to be adopted if it is perceived in a positive light. Whilst logical reasoning may influence the person's perception, it may not be adequate to convince the individual that there is a perceived benefit.

Davis' (1989) idea of perceived usefulness is consistent with Rogers' (1995) criteria of relative advantage and compatibility. That is, a technology is more likely to be perceived as useful if the practitioner perceives a relative advantage over existing practice and if the technology is compatible with that practice. Davis' (1989) idea of ease of use is consistent with Rogers' (1995) idea of complexity. That is, a technology is more likely to be perceived as easy to use if it is simple to use rather than complex.

An analysis of the characteristics of e-learning functionalities that are used more or less frequently in the current study suggests that there are four criteria that influence adoption: newness; complexity; compatibility; and, locus of control. The first two of these criteria relate to the nature of the technology, the second two relate to teacher's practice. My interpretations are based on personal knowledge of vocational teachers' practice and premised on the model of largely face-to-face teaching in a TAFE college. Given that approximately 63% of respondents reported that their primary mode of teaching was face-to-face, and 14% a balance of face-to-face and non-face-to-face practice, this would seem to be a reasonable model of practice to adopt for the respondent group.

Analysis of data shows that the eight most frequently used functionalities are used at least weekly by more than one-third of respondents and at least monthly by more than one half of respondents. These eight functionalities relate to individual and group email (teacher to learners), Internet searches for learners, Internet/intranet distribution of a range of file types and electronic submission of assessment in the form of files. Analysis shows the following in respect to these eight most frequently used functionalities.

1. Newness: All have been available for some time and cannot be considered to be recent additions to vocational teaching.
2. Complexity: All are likely to be able to be used by vocational teachers with a moderate level of technical skill at their desktop and without the assistance of intermediaries.
3. Compatibility: All are likely to be compatible with, or at least not incompatible with the face-to-face teaching practices of a typical TAFE teacher.

4. Locus of control: None require the teacher to cede control over the means of communication, sequence, pace or assessment criteria to another party.

These findings cannot be universally asserted across the remaining thirteen functionalities.

Newness and Frequency of Use

Newness is related to the passage of time from when the functionality has been generally available and promoted for use in education rather than the time from development. Newness may be associated with the use of an existing technology in a new context: for example, the use of email for personal communication as compared with the use of email to support teaching practice.

In a temporal sense, some of the 21 e-learning functionalities have been generally available to support teaching and learning for some years, others have been introduced more recently. As a general trend, functionalities that have been available for some time (e.g. email, internet searches, distribution of files) are used more frequently by more vocational practitioners than those that are more recently introduced (e.g. blogs, virtual classroom software, e-journal, e-portfolio). It is reasonable to propose that the more recently that a functionality has been generally available and promoted for use in education, the more likely that the frequency of use will be at a low rate. With the passage of time, the frequency of use is likely to increase. However, there is variation in the frequency of use across functionalities that have been available for some time. That is, increases in frequency of use over time are not universal or equal in all cases.

For example, discussion forum, bulletin boards, Internet/intranet for computer based assessment, group email between learners, Flexible Learning Toolbox products and text chat have been available and promoted for use in education for some time but less than one-third of respondents report the use of these functionalities on a daily or weekly basis. This finding begs the question: what factors influence the frequency of use of online functionalities with the passage of time? I propose that the increasing use is associated with the perceived complexity, compatibility and locus of control.

Complexity

Complexity is related to the difficulty that a vocational teacher is likely to experience in using the functionality. This criterion is consistent with the notions of complexity described by Rogers (1995) and ease of use as described by Davis (1989). The less complex the technology the more likely it is to be used frequently by vocational practitioners.

The eight most frequently used functionalities surveyed require the skills of email communication, Internet searching, use of the Internet/intranet for the distribution and receipt of a range of file types. In a general sense, it is likely that a vocational teacher who is able to independently conduct tasks such as downloading and installing software, managing files and creating basic level files would be able to operate the most frequently used functionalities at their desktop without the assistance of other specialists such as computer programmers and graphic designers.

Whilst the use of the Internet/intranet for the distribution of web-based (html) learning resources may be interpreted as requiring html programming skills, the surveyed functionality refers specifically to distribution rather than development. In future surveys, the differentiation between development and distribution would be worthy of more obvious distinction. However, for the purposes of the current article I have interpreted the findings associated with this functionality in a literal sense.

Computer marked assessment and Flexible Learning Toolbox products have been available for some years for teaching in vocational education, yet approximately one-quarter or less of respondents use these functionalities on a daily or weekly basis. They clearly fall within the lower 50% of functionalities in terms of frequency of use. I propose that the use of these products requires skills beyond those held by the average vocational teacher and this, at least in part, accounts for their lack of use by many teachers.

Compatibility

The use of the criteria of compatibility is consistent with that described by Rogers (1995) who defines compatibility in terms of the congruence of an innovation with the individual's values and beliefs, existing practices and perceived needs. The more compatible the functionality the more likely it is to be used frequently. The issue of change and teachers' values and beliefs is complex and has been discussed elsewhere (Errington 2001, 2004; Pajares 1992). It is beyond the scope of the current article.

Compatibility can be interpreted in two ways. Firstly, functionalities are more likely to be adopted if they are congruent with existing values and beliefs, practices and perceived needs. That is, they are perceived to have a positive benefit. This notion is similar to the criteria of relative advantage proposed by Rogers (1995) and usefulness proposed by David (1989). The second interpretation is that functionalities are more likely to be used if they do not have a negative impact on, or require significant changes to, existing values and beliefs, practices or perceived needs. That is, there is no perceived negative impact.

The eight most frequently used functionalities surveyed require the skills of email communication, Internet searching, use of the Internet/intranet for the distribution and receipt of a range of file types. If we use the model of a vocational teacher whose practice is primarily face-to-face in a traditional TAFE college then, I contend that the eight most frequently used functionalities are, at least, not inconsistent with conventional face-to-face teaching practice. That is, even if they are not perceived to have a positive influence on teaching and learning interaction, they do not require any significant change in practice.

Beyond the eight most frequently used functionalities, a number have the potential to require a change in practice. For example, discussion forum, text chat, blog, virtual classroom software, audio and video conference would require teachers' to operate outside of normally timetabled sessions. Some require the application of new skills and practices. This observation brings me to a fourth criterion which is not explicitly identified by Rogers (1995) or David (1989), that is, locus of control.

Locus of Control

Locus of control is related to who controls the pedagogic interactions enabled by the online functionality. Bernstein (1996) refers to the concept of framing to describe the locus of control of selection of communication, sequence, pace and assessment criteria. My proposition is that functionalities that leave control of decisions related to pedagogy with the teacher are more likely to be used frequently.

The eight most frequently used functionalities relate to individual and group teacher to learner emails, Internet searches for information, Internet/intranet for the distribution of files and electronic submission of assessment in the form of files. None of these require a teacher to cede control of communication, sequence, pace or assessment criteria to either the learners or another party. Alternatively, whilst computer marked assessment and Flexible Learning Toolbox products are not new, they require the teacher to cede control over the design of much of their program design to others.

Conclusion

This article reports the development, administration and analysis of a survey to reveal details related to the frequency with which particular functionalities of online technology are used by a group of teachers in vocational and technical education. The findings reveal differing frequencies of use of functionalities amongst the respondent group. This data has the potential to contribute to an analysis of return on investment.

Analysis of the patterns of use and the characteristics of the functionalities suggests that there are four main criteria that promote and limit the frequency of use. These are newness, complexity, compatibility and locus of control. A consideration of these criteria might positively influence the frequency with which online functionalities are used if applied to the design of interventions and activities aimed at increasing the use of technology based functionalities.

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Interview

Finding your voice online

Interviewer: Cathy Baxter

Cathy: *Welcome to this interview of The Knowledge Tree Everyone between myself, Cathy Baxter and Margaret Robson. Margaret is a teacher within the Teacher Education Department of the Canberra Institute of Technology (CIT) and has been teaching the Certificate IV in Training and Assessment for a number of years. In this interview Margaret will talk about the strategies she has used to give her adult learner groups a sense of 'finding their voice online'.*

Well welcome Margaret, and as a starter can you give us an overview of who your adult learners are and the context of the teaching and learning experience?.

Margaret: Yes, my students are CIT teachers who have enrolled in the Cert IV in Training and Assessment. Most have come to CIT teaching fairly recently from other activities and teaching full time or part time. Most of them are between 30 and 40. If there is one thing common to all of them it is that they have come from different paths and come to teaching in their 30s but bringing with them a huge range of industry and life experience.

Just as an example, I have one student who has had a graphic design business for 20 years, and he now wants to put back something into the industry so he is going to do this by teaching. I have another student who is a nurse working two days a week and teaching three days a week and also just to give a different example, one student is a technical officer working here at CIT but picking up some part time teaching.

So a very diverse group in terms of age, computing experience and educational background.

Cathy: *Thank you Margaret, they certainly sound a very diverse group of learners. Can you now tell us what do you mean by the concept of 'finding your voice online'?*

Margaret: Yes in this context, in learning to teach, finding your voice is about being able to articulate your teaching practice. Basically you are identifying what you do, which strategies you are using, strengths, things you like, things you don't, things that you are having issues with, students, but all in a safe way and {to} not feel stupid but rather that you are bringing issues to the table for common discussion.

And it is as you do that and other people are doing this at the same time, people are making meaning in different ways, making links between theory and practice and basically constructing knowledge.

Cathy: *OK so one of the first steps is to make people feel safe and confident perhaps especially in the online environment?*

Margaret: Yes, that's right. The online environment is tightly integrated in, it is a blended learning environment so both are running in parallel, the face to 2 face (f2f) and the online and what I find is that people feel more confident in one or the other, but

regardless of which one it is that the environment provides acceptance, and encouragement and listening and so voice is allowed to come out but in a safe way.

When you look at the learning that can occur there, the learning is basically happening when people are sharing their experiences, linking into the theory, looking at other perspectives, and seeing what other people do because that makes them re thinking their own practice when they see some one else doing something completely different but solving a similar problem and that makes you think "well why am I doing it this way, why am I not doing this the same way as someone else?". Being able to reflect, try things out and reflect on it, so that is the learning and the environment needs to be able to support this and it also needs to be able to support it is a way that allows peoples voice to evolve, so it is not just having a say and be done with it - but it is a continual process of going through this process of learning and reflecting, and rethinking again, trying out new things, in a very cyclic way.

Cathy: *Margaret that sounds very comprehensive, I am wondering now of you could outline some of the very specific strategies that you use with this whole concept of finding your voice online that works with your group?*

Margaret: Cathy my overriding goal with the online learning is that I really want them to post a message, once they have posted one message and they see that others are reading it and getting something out of it, then they are spurred on to post more.

There are a whole host of little things that I do to promote this process and one thing is to set the expectation right from the beginning, OK you are here and you have something to say, and that it is OK for you to say it but that whatever you say is accepted and others are listening to it. And you get to post a message and that validates your voice. People gain a lot of confidence from that.

Before the program starts, I visit with them and get them to talk a bit about their teaching, and find something that is unique about them, that they can post, and realise that it is unique and I usually just tell them that you know about this and it will be a really good thing to post.

Once they actually come to the course and get into the online environment they do a series of exercises, an ice breaker. They introduce themselves, say three things about themselves, email recipes around, just have a bit of fun, they are welcomed with a virtual chocolate.

In parallel there is a f2f icebreaker, where they have to say something about themselves that nobody else would have done, something like camping without a sleeping bag, funny things usually and they have to match the comments with the person and this gets them laughing and chatting. It is heaps of fun but it also serves another purpose in that they all appreciate in each other that they all have different backgrounds and life paths and have huge experiences and it really paves the way for ongoing respect and communication.

Once they get to post information, some people aren't so computer literate and the worst thing would be to put them in a situation where they felt they had been thrown in the deep end. Sometimes they are not fully understanding what the online environment is about plus also they have to type, and post messages and that sort of thing, so what

they do is have a discussion in their small group, work out something, whatever the content is for that session, devise a message from their group. They all contribute to it and the person with the most computer expertise, lucky them, they get to post the message, and the others sit and watch and while they are watching they get a sense of how it all works. Then after that, they go on[line] themselves and see the message there.

There is also a host of other activities where they are given different perspectives. It is a very staged process going from simple sharing of easy things, going to more in-depth critical analysis, about issues connected to teaching and learning, activities similar to web quests and it culminates in a fully blown online discussion which happens in the latter part of the course and this is not face to face at all. It is purely online and the discussion is structured so that people can post at their own level and this is the crux of it, that regardless of what they have got to say, or where they are at with their teaching, or how much experience they have, they are really given permission to post in a way that they are going to feel comfortable with.

As part of the discussion they are invited to post messages with different scenarios, for example they can post a message with a case study of a difficult situation with a student or a very wonderful situation. This is fantastic when people do that but not everyone feels comfortable. If they don't want to do that they can either post a message with a case study similar to someone else's, they can offer a tip or an insight or something from their own experiences as a student or they can say something about the theory they have covered in class and how it pans out with someone else's posts. So they have a choice and whichever way they go, it is a level playing field, their contribution is very important.

Cathy: *It sounds like a very well thought out program Margaret going from simple interactions going to the more complex. Now I know that you mentioned to me something about the Belensky [1986] model for giving voice and that part of your thinking is based on that model. Could you explain to us what Belensky's model is all about?*

Margaret: Yes, this is a research project in the 80's basically around women's learning where Belensky and four others surveyed about 134 women to look at how they acquire, use and generate knowledge and although this research project is about women's learning, for me I have just taken what I need from it. It actually suits people regardless of gender when you look at it in terms of understanding the voice and allowing people to evolve their voice and therefore be more committed and engaged with the learning process.

There are two things that resonate with me about Belensky [et al.]'s research. One is the way they have identified five categories of voice and just to look at two voices which are different ends of the spectrum - one is the 'voice of silence' and Belensky says that some of the women she surveyed perceive themselves as not having a voice and so what they do is blindly follow authority and allow other people and events to make decisions for them. That is really quite a passive voice. But at the other end of the spectrum and Belensky called this 'the roar on the other side of silence' there is the voice of constructed knowledge and here people have the confidence and the belief in themselves that they can develop their own perspectives and being able to integrate this with reason and things on the outside world, that is it's not just their own judgments. They are developing their own judgments, opinions and strategies, but also looking at

these in light of reason and learning theory and teaching theory. So for the Cert IV it is an important part of the program because this is what I want them to do, to formulate their own judgments, share with others and engage with other perspectives, but not in a way that you are continually engaging with poor practice, in a way that you are aligning what you say with good principles and theory that is relevant to helping you learn the skills for teaching.

The other thing from Belensky that I like is that she talks about a 'connected learning', 'connected knowing' and a 'connected classroom' and the connected classroom is a place which nurtures the authentic voice, allows people a pathway where they can be articulating their knowledge but expanding it, continually giving birth to the new perspectives and new ideas so it is a very dynamic process and this fits my goals for the Cert IV.

Cathy: *To sum up Margaret how do you think your concept of finding your voice online actually impacts on your learners?*

Margaret: Yes, there a number of things. One thing that I really hope that happens, and it does seem to happen, is that when people come along a lot of them haven't used the online environment before, and everyone has a perspective about it and not all of it is positive, but I just hope that it will be an experience that they enjoy and get something out of and the online will contribute to their teaching lives. So that is the enjoyment part of it.

There is also the fact that as they have gone through the course, posting week after week, posting their tips, strategies, linking to theory, they have actually created a very rich and quite large resource full of teaching strategies. And just to give an example of that, two different examples, one is in an online discussion: one semester I had a teacher teaching welfare and he had just been working on the Disability Act and was concerned that his students understand the concepts of respect and equal opportunity and equal chance in life, - and one issue that comes up all the time for participants in the course, is the issue of students talking in class. It comes up every semester and there are a number of strategies from simple tips and techniques to actually reengineering the subject matter, that can work for that situation, but in this case one of the participants posted a message saying "I have some students talking in class, anybody have some suggestions for me?" and the participant teaching welfare posted a message saying "I had this situation last week in my class with students talking in class and I said to these students how much respect do you have for others in the class if you are talking?" and he posted this message. Several other participants later said they had tried this out and it actually did work quite well. So they have new tips and insights to share.

Another one is... you know the beauty of the online is... that you actually get a historical perspective. I had one person post a message about an exercise he used. Instead of reviewing content, he put his students into groups and asked each group to identify things they were not sure about and to write these as questions. Then he gave one group's questions to another group to solve and it is an exercise which can be applied to a number of teaching situations. Several students said they used it and tried it out, one student said he used it and tried it out and it didn't work and all of that is posted online, getting a lot of information up there.

I think the most important thing for me is the life long learning. Teaching is a journey and a process, and aside from learning the teaching skills it is a continual cycle of evaluating your own practice, extending yourself into new ways of operating, starting the process of becoming critically reflective of your own practice, developing the judgment, 'OK these are your students and this is the content, I will try "abc" not "xyz" because this will resonate. You have the experience to say this will work. It is sustainable learning and one that continues through your whole life.

Cathy: *Margaret thank you very much for your time this afternoon - you have really given us a lot for us to think about.*

Margaret: Thank you.

Live Conversation

A live online 'conversation' with our lead writer will follow the Edition 9 release, allowing users to discuss and debate articles and surrounding issues in greater depth.

To join Joanne Jacobs on 30 May at 2pm EST go to:

<https://www.illuminate.com/site/external/launch/demo.inlp?password=354094423>

The 'conversation' will run in conjunction with activities run by the Australian Flexible Learning Framework's (Framework) E-learning Networks Project.

For more about the 'conversation' and how to participate visit:

<http://www.flexiblelearning.net.au/networks>

Details of how to set up and configure your aggregator and mobile device are available in *The Knowledge Tree* space at <http://flexiblelearning.net.au/knowledgetree>