Future’s Business: Harnessing Emergent Wearable Technologies for the Australian Vocational Education and Training Sector

CONFERENCES PAPER

Alexander Hayes
February, 2004

dear@alexanderhayes.com

Keywords

education, pedagogy, human-computer, wearable-computing, emergent-technology, privacy, change

This paper was presented at the 2004 Fresh Thinking Pilot Network Conference hosted by the Department of Education and Training, Perth, Western Australia at the City West Function Centre, Perth, Western Australia.
Abstract

The relational paradigm of human-computer interactions which meld user experience with curriculum are challenging educators within the vocational education and training sector (VET) in Australia. Harnessing the interpersonal relationships that develop with the assistance of these emergent, wearable mobile computing devices seems to be at the crux of the authenticity crisis the VET sector faces with its ageing practitioner population. Interacting with a shifting field of virtual spaces and places, where interaction is fast and seemingly disjointed, may well be isolating a generation of elders who not so cleverly use nomenclature such as ‘disengaged’ to describe those learners who opt out of the current didactic and arcane mode of service delivery.

It is evident that the ‘future’s business’ now includes bringing VET practitioners into the interactive world of mobile technologies and the differing relatedness that this emergent electronic interface demands. This paper explores differing perspectives and issues which surround the introduction of an interoperable learning context where e-learning meets mobility.

Learning Spaces: Futures Places

With the average age for the VET sector practitioner now fast approaching the half century mark, warning bells must surely be ringing for various portfolio managers watching their teaching staff struggle to comprehend the attitudes of their seemingly ‘disengaged’ student cohort. Misunderstanding the student’s nodding off and staring into their lap behaviour and faced with the reality of a knowledge gap that is widening, the VET sector may indeed be faced with a ‘retiring’ crisis situation.

The lack of interactivity between students and lecturers in engaging in forums which explore the use of communication and computing technologies could well result in an ‘us’ and ‘them’ scenario.

A generation older and still struggling to come to terms with the idea that the ICT sector has in many instances made their lives harder, the issues and
complexities which govern the onset of mobile-technology-supported learning may in some instances cause the innovation of interoperable mobility to be dismissed by practitioners as simply another distractible attention draining vortex. In many cases the questions practitioners raise are centred on whether the use of mobile technologies are actually extending human talents or in fact fostering educator / learner non-cooperation.

At a systems management level, it may be time to consider that the ‘place’ for learning may well need to be redefined, to adequately embrace the onslaught of learners expecting a differing learning engagement system. American sociologist David Riesman as cited in Plant (2004) identified three basic modes of relating to the world, each corresponding to clusters of traits and patterns of behaviour. These three clusters are known as ‘tradition-direction’, ‘inner-direction’, and ‘other-direction’ - all three character modes reflecting people’s immediate sources of guidance, knowledge, and support.

Most importantly they also provide a useful framework (particularly for educators) with which to consider people’s relationships with mobile phones. The concept that students are now operating out of a belief in global dreams where “It's out there. Happening. Right now.” may also mean that the educator needs to join in on a movement which rivals what they have experienced as they grew up when and where the internet did not exist.

If indeed the learner or educator gap has widened to the point that the configuration for the imposition of believable ‘place’ for learning has been redefined, then the uptake of wearable computing that replaces ‘place for learning’ may well be known as part of the ‘space for learning’. The importance of place or ‘whereabouts’ positions mobile learning or mLearning as central to contemporary pedagogical practice and the VET sector must keep up pace with developments in this wearable technology field lest it lose its cohort to private providers.
Leapfrog

The ability of the VET sector to harness contemporary learning styles seems thwarted by cross-sector policies which seek to preclude the mobile learning device from many other profile delivery settings.

Banning the use of such devices in learning environments which precede the training provision setting ie. secondary schools, points to the immediacy of need to openly address issues that surround emergent technology use – not simply adopting an aggressive exclusion of anything that dares to challenge the model for service imposition. On the other hand, considering the learning styles of young people and the mobile technologies which support the diversity and immediacy of information available for their retention, has literally driven many innovative educators to contemplate whether in fact they would be better off undertaking professional development which enabled them to ‘leapfrog’ the ICT digital divide altogether.

Considering that the password generated digital divide is no longer applicable to a user pays mobile learner, it will be interesting to observe whether the VET sector has indeed the capacity to harness these mobile emergent technologies with immediacy. Finding professional development and relevant mobile learning training in institutions at present places educators ( and management alike) in the position of ‘catch-up’ considering that the learners have had the access to relevant knowledge before they did. Many are thankfully in the best situation for on-the-job-training – and in its purest form!

The relevance of this on-the-job-training training according to Marc Prensky, an e-games learning designer, is critical to the retention of these learners in the workplace. Prensky (2004) states;

“Remember, people are learning all the time. If there is something about their job that actually interests them, they will learn it by themselves - that's how "on the job training" works. For the rest they must be helped, either because it's difficult, boring, or both. It is for things that workers don't want to learn that we typically send them to training.”
The authenticity of any interaction Prensky purports, is at best, under intense scrutiny by the learner at all times. The end user experience for both educator and learner using mobile technologies must therefore be genuine (not gimmicky) and respectful of students private space, their chosen mobile device.

**The Private Space**

Many educators must be at the point of pondering the extent to which their inability to understand the complexities of their learners’ needs has arisen as a result of the onset of these pervasive mobile technologies. This phenomenon of mobile interaction with its ‘ever-on’ communication channel must seem frightening and odd. Perhaps, for the educator, the major questions arise when contemplating how to engage a seemingly ‘disengaged’ student:

- *To what extent will these new technologies control the horizons of the teaching environment?*
- *Will we be able to evade the emergent technologies and maintain, engage with, design and still evaluate our daily interactions with any real sense of teacher/learner authenticity?*

This authenticity of learner / educator interaction is a consideration that many research programs will have to embrace if a user friendly, non invasive, open-to-negotiation futures learning environment is to develop.

**The Human Computer**

Elisa Giaccardi (2000) predicted that networked computing in the form of mobile devices would become a more pervasive component to the learning setting ‘*unobtrusively sprinkled through the physical environment*’.

The concept of human-computer interaction were explored in the ISEA2000 proceedings where the terms ‘interconnectivity’ and ‘relational embodiment’
were coined, to try to explain why these emergent technologies were fast becoming more than just handy fashion accessories. The onset of environments where computer driven applications become embedded in everyday objects, Giaccardi proposes, may mean that the educator would have to embrace these applications as part of the learning environment to the point that the “ubiquitous computing device spreads intelligence and connectivity to more or less everything”.

Many educators would argue that this explosion of electronic connectivity, driven by the consumer market, has in fact led to the decline in intelligence as they know it and led to a lack in committed personal interaction particularly between learner and educator. Mark Schreiber explores this concept three years later by commenting on observations of teenagers in Japan who have trouble interacting at all in unified educational settings.

He also expresses his concerns for the future generations of learners;

“...If electronics firms have their way, a whole new generation of products will soon be squeezing images, sounds and data into your pocket, your wristwatch, your eyeglasses and who knows where else, until absolutely nobody talks to anybody. Ever!“ - Schreiber (2003).

Innovation: An ICT perspective

Thankfully a consistent overture still punctuates discussions, that of the importance of creative innovation whilst maintaining the personalisation of any interactive electronic interface.

Professor David Hargreaves, key speaker at the Transforming Teaching and learning Through information Communication Technology (ICT) Education.au Limited conference held in Sydney in 2004, believes that fundamental flaws exist in the ICT arena due to that fact that educators have rushed to immerse students in ICT without adequately mapping & transversing the modes by which to personalise this electronic learning platform.
Hargreaves points out that within the mobile technology arena there is an inverse and opposite reality, as students predominantly engage in the personalised use of these technologies, in spite of and altogether apart from the interactions with the educator. The success of an educator seeking to integrate mobile technologies with that of existing ICT learning experiences and other constructivist learning mechanisms, according to Hargreaves, hinges on the educator's ability to “personalise the user experience ahead of technological innovation”.

The colossal amount of expenditure on 'network capital' Hargreaves stated, points towards a flawed education system investing resources into developing systems that offer choice, diversity and competition yet little in terms of innovation and true performance outcomes. The same principles may also apply when critical assessment is conducted examining the potential for mobile devices to enhance user experience in conjunction with other elements of the electronic interface. Hargreaves went on to provide a fascinating account of how the climate of the "fundamental fear of failure" within which many educators exist, is the cornerstone for innovative research and development. This concept Hargreaves equates as 'falling forward into mistakes which lead to the development of grounded innovation networks'.

To understand the importance of innovation networks, one must examine the ways by which sustainable research and development in the ICT sector informs future modality of learning experience using emerging mobile technologies.

**The Mob as a Cultural Entity in Itself: The Emerging Learning Environment**

Grabbing chunks of ever smaller modulated pieces of information from diverse sources and armed with emergent mobile technologies enables mobile user interoperability 'on the run'. Students appear now to have become more adept at piecing their education together without the need to defer to the wisdoms their educator would otherwise seek and attempt to impart.
Discarding or choosing to retain only what is absolutely necessary seems possible to the learner when the avenue by which to acquire knowledge, facts and skills is only a fingertip length away. In contrast, many traditional learning settings facilitate learning provision far from ‘just-in-time’. Many issues have emerged as learners set precedence of their mobile technology interactions over that of the traditional learning setting. With phones answered at all times of the day, social meetings are now often punctuated by polyphonic ring tones and urgent, hurried conversations concluded with apologetic ‘m-etique’.

The architecture of this contemporary interaction between whole groups of people according to Mark Schreiber could be verging on a state of continual avoidance of direct interaction. Other analysts call these social architectures and behaviours attributed to this group as the emergent ‘smart mob’ and others the ‘swarm’ as coined by Howard Rheingold. The importance of the futures classroom, is recognising the learning environment that young people are developing for themselves with the aid of emergent, wearable and mobile technologies and the implications these technologies pose for the VET sector and wider society as a whole.
References


Recommended Further Reading

Blood, Rebecca - http://www.rebeccablood.net

Galloway, Anne - http://www.purselipsquarejaw.org


Greenspan, Robyn - http://www.jupitermedia.com

Rheingold, Howard - http://www.smartmobs.com/

Segio, Fabio - http://www.freegorifero.com

Steenon, Molly Wright - http://www.girlwonder.com/