

## **In the Future... (not so distant)**

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*Case study for Learning Technologies Conference, Mooloolaba, Queensland,  
11<sup>th</sup> to 12<sup>th</sup> November 2005*

### **Abstract**

This paper describes a vision of future vocational education environments. The realisation of this vision is planned over the next 5 to 10 years in Barrier Reef Institute of TAFE, a regional Institute that covers an area of 145,290 square kilometres or 9% of the total surface area of Queensland. The environments are named '*Vocational Learning Zones*'. The planning for the future is based on the rapid growth of communication technologies such as broadband and wireless, and their infrastructure as enablers for the distribution of services, learning content and support into a geographically distributed area.

In this paper we have concentrated on the information and communication technology. Consideration has been given separately to community, industry, learning design, curriculum development, learner readiness, staff capability, and spatial aspects of the vision.

## ***Lets take a look... (into the future)***

*Karen drops the kids at school and heads to the shopping centre but she is not doing the shopping. Well not yet anyway. She is going TAFE. This morning she got a video message on her mobile phone from her Learning Facilitator who gave her some feedback about an assignment. Outside are several other TAFE students having coffee and sitting in lounge chairs grouped around a large screen. They are viewing a presentation from a guest speaker (in Melbourne) and talking via desktop video conference to their facilitator who is in Charters Towers*

The year is 2010. The TAFE is Barrier Reef Institute in North Queensland (BRIT). The solution for vocational learners is no longer solely in the class room or in the workplace. The solution for vocational learners is in a technology based environment with a personalised support system which is enabled by the technology to promote excellence in individualised contextualised learning material.



Figure 0.i Learners collaborating by desktop video

*Karen is arranging placement in a nursing home for next 3 months for the workplace portion of her training. She has leased a pocket PC from BRIT for the duration of her studies. She uses its wireless connection capability to dial up the nursing home supervisor. Karen could have done this from home but it is easy to slip into the BRIT VetLink.*



Figure 0.i VetLink centre

BRIT has become industry and community based. With wireless access learners and facilitators can access materials and communications from most places in the region. There are 'drop in' access points distributed through out the region – the 'VetLinks' which are situated in coffee shops, bars, shopping centres, and council libraries. Equipment can be leased or borrowed as part of the course materials. In the old days materials included several text books. Now it is a download from an internet site or a file 'wapped' to your pocket PC which combines the functions of the pc, PDA and mobile phones of 6 years ago.

*Alice is happy to talk to Karen and arrange the placement. She has several 'student' aged care workers working in the nursing home. Alice supports the placement of 'student' workers because it contributes to getting well skilled and knowledgeable staff. She has assigned a 'workplace mentor' to assist Karen and worked out a specific list of duties and tasks. The workplace mentor is a semi retired nurse. Her specific duties are to assist student workers for the first placement. She is part of the nursing home staff and also*

*part of the TAFE staff. She does normal though reduced duties for the nursing home to allow her time to work with 'students'*

Australia has an aging population. In many areas the skills and knowledge and experience – the implicit knowledge- of these people is lost as they reach retirement age. Many people are not ready to retire completely from the workforce when they reach retirement age. In return for tax benefits this 'senior' workers group is coming out of retirement for part of the year and working with learners in their industry.

*Brian sees Karen across the room beginning her video conference. Brian, and Karen's partner Bill, completed a sport and recreation course at TAFE several years ago. Now Brian runs a squash court and is thinking of expanding the business. He needs to have up to date knowledge of how to create a marketing plan. With the help of the VetLink staff he has just finished using the 'advisory pod' to map out exactly what he wants to know and what learning experiences will supply the know how that he needs. Now he is using the pod to enrol and download the materials list and first lessons. Although he has an older style phone the VetLink staff can supply a cable to make the download easy for Brian. At the same time he electronically transfers funds to pay for the course.*

While on line and telephone enrolment has been around for a while there has not always been the same ease in getting career and enrolment advice. In the early 2000's potential learners had to go to enrolment centres, phone call centres and try to get appointments with teaching staff. In 2010 trained counsellors are available via phone and videophone. The counsellor may not even be in the same town as the enquirer. The IP video experience is almost as good as the 'face to face version. It may be conducted from home, workplace, school or advisory pod. Counsellors are trained in assessment and RPL. They have a large knowledge of the types of experiences that may help a students on their chosen career path and will map a 'learning plan' that may cover a few days, weeks or even years to assist students to achieve their goals.

The Advisory pod is an electronic 'help desk' specifically for people and businesses who have a specific need and a short term goal. A series of questions lead the client to a selection of learning experiences and modes of delivery that will assist them to achieve their goal. Potential clients and learners may also email or video mail to an specialist advisor for further assistance. Advisory Pods are touch screens and they can download data to mobile phones or other pocket devices. They also have secure payment facilities- again billing your telephone account or allowing an online transfer of funds. Advisory Pods are as common as ATMs so help is always accessible.



Figure 0.ii Consultation and course selection advice

There is also an internet version for home access.

*Gary has also used the Advisory Pod, along with his mum and dad. Gary is in year 10 but next year he wants to begin a trade career – his grandad was a plumber and Gary wants to follow in his footsteps. This means going to school for the next 2 years but some days he will be at school and some days ‘on the job training’ or TAFE. One day a week at school will be theory based trade modules. He will do this online from the school Library Learning Centre. His TAFE teachers will interact with him via video, email and video chat. Some of the work will be self paced and student centred and modules will be corrected online immediately. His parents are worried that he will not work at the material but Gary has seen the online stuff and its more like a video game not like the text based stuff they were used to. Gary has some reading problems so he is not keen on text. However in the school library learning centre is a tutor who can help him with reading difficulties and assist him with instructions.*

The students of 2010 are very technology savvy. They expect to be entertained as they learn and they are aware that learning can take place anywhere. Online materials are highly interactive with both synchronous and asynchronous support. Working at several things at once is something students expect – like listening to music while doing online modules and chatting to a friend on the internet. The problem becomes not to inhibit these activities but direct them by engaging the learner and building on the skills and knowledge that the learner brings to the course to construct new concepts and knowledge and develop new skills. The key is the quality of the interaction. When the learner actively participates in the learning experience the pedagogical gains are considerable<sup>1</sup>.

## **The Vision**

*“A learning environment is a physical, intellectual, psychological environment which facilitates learning through connectivity and community”<sup>2</sup>*

A learning environment can be anywhere, any place and any time. With a strong technology base, vocational educators can create learning environments that are time and place independent and which directly connect to the workplace and promote engagement of the community. Such environments the authors have termed Vocational Learning Zones. Vocational Learning Zones (VLZs) are the building blocks of the future TAFE presence. They are modular, adaptive, connected and partnered. They enable blended, distributed and collaborative learning.

‘Vocational Learning Zones’ (VLZs), are supported by leading edge information and communication technology (ICT) and infrastructure. They are

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<sup>1</sup> 1999 Committee on Classroom Use, IUPUI Indiana University, Planning for Learning: Part 1 Pedagogical Issues, [www.ulib.iupui.edu/itt/planlearn/part1.html](http://www.ulib.iupui.edu/itt/planlearn/part1.html) accessed August 2004

<sup>2</sup> 1999 Committee on Classroom Use, IUPUI Indiana University, Planning for Learning: Part 1 Pedagogical Issues, [www.ulib.iupui.edu/itt/planlearn/part1.html](http://www.ulib.iupui.edu/itt/planlearn/part1.html) accessed August 2004; “What is a Learning Environment”

dependent on fast, reliable communications technology, making use of wireless and broadband services to keep learners and TAFE staff interconnected. Learner support is both real time and asynchronous using desktop IP voice and videoconferencing; stored multimedia, collaboration software (eg Centra, Webex), smart software such as computer aided learning applications as well as the more traditional email, threaded discussions, and real time chat.

Virtual environments and simulation software are available for learning and practicing a variety of technical skills. Indeed much of this type of software is already well established and well proven in a variety of industry specific settings (eg CISCO, flight simulators).

The capability exists for learners and staff to link personal technology (eg PC, PDA) to both internet and TAFE intranet from home, locations in the VLZ and elsewhere in the community. Learners are part of a 'learning community' enabled by the use of readily available affordable technology.

Learner participation and progress is recorded, accessed and reported electronically. Access and security are maintained by state of the art identification systems (eg smart cards, fingerprint recognition etc). Content is managed, selected and organised centrally for the individual learner or enterprise. The learner becomes a 'knowledge worker'.

Technology and learning support (either synchronous or asynchronous) is available twenty four hours a day and seven days a week.

### ***Enabling the Vision of the Future***

The vision of Vocational Learning Zones that are accessible and available to learners is only possible through a strong information and communication technology backbone. The technology must be fast, reliable and relatively inexpensive. A review of communications planning in the Townsville and Thuringowa region indicates that both Telstra and Optus are adopting strategies that will provide "broadband services including voice, data and video streaming at or above current speeds but with considerably lower infrastructure costs"<sup>3</sup> over the next five years.

Wireless Local Area Networks are already available in the district making mobile computing a reality by providing 'hot spots' which allow users to access internet and email services from locations such as hotels, restaurants (and even the Rockpool!). Processing speeds are becoming faster and storage is becoming smaller. Memory USB sticks are already relatively inexpensive, lightweight and large capacity. Hand held computing devices are becoming widely available, offering a variety of features and accessibility to services. They are also decreasing in cost.

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<sup>3</sup> October 2004, Balfour Consulting , 'Technology and e-learning, population, demographics and current and future employment in the Townville/Thuringowa region from 2004 – 2014 p17 -24

Of course the most successful hand held device to date is the mobile phone. Mobile phone capability and usage has increased dramatically.

*“From 1998 to 2002, the number of non-metropolitan households with mobile phones grew 29% from 37 to 66%. At this rate of projection, most households will have access to a mobile phone by 2014”.<sup>4</sup>*

A mobile phone may have camera, video recording and playback, voice recording and playback, internet accessibility, messaging capability (text and voice) as well as telephony. It is portable, small and wireless. These features make it a very formidable tool for delivery, communication and support in a learning environment.

Present growth patterns in home computer ownership and internet access will be available in 82% of Townsville Thuringowa homes within the next five years. This is in line with national predictions. In addition basic computing skills are a part of Queensland school curriculum. As the larger part of BRIT's expected clientele will fall in the age group of 14 to 25<sup>5</sup> year olds it may be expected that the average vocational learner will be much more computer literate than in the past.

There are many highly capable, highly interactive online learning products available. Many of these are commercially produced and include tracking and learner management systems. ANTA has made major contributions towards increasing the availability and quality of online learning material particularly focused on the VET sector. There is a quantum of research being undertaken nationally and internationally in the area. The likelihood is that these trends will continue and high quality learning resources for Vocational Education will be further developed and become less expensive.

## ***Planning the Future***

The Institute ICT planning over the next five years is designed to bring this vision of the future to reality. As an interim step the Institute is exploring the possibilities of broadcast technologies – one delivery and many reception points. Broadcast technologies include those that are well established such as videoconferencing and those that are less familiar such as podcasting.

Learners already have a variety of technologies available to establish a 'sense of community'. Skype (a free product) allows person to person audio chat via the web. Products such MSN allow text chat and exchange of data with the capability for vision and audio. Discussion boards and Weblogs are commonly available with threads on almost any topic and contributors throughout the world. Planning is underway to enable push/pull technology ie

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<sup>4</sup> October 2004, Balfour Consulting , 'Technology and e-learning, population, demographics and current and future employment in the Townsville/Thuringowa region from 2004 – 2014 p24

<sup>5</sup> October 2004, Balfour Consulting , 'Technology and e-learning, population, demographics and current and future employment in the Townsville/Thuringowa region from 2004 - 2014 p22

SMS, m-email, learning resources for handheld devices as well as the more conventional laptop. To this end the Institute plans to pilot wireless access in two locations in the BRIT, in both the administrative network and the education network. These locations could be the Pimlico campus and a space in the City. This would include access points in the spaces.

Of course hand in hand with the technological capability is building the capability of staff and learners to use the technology.

## ***Conclusion***

The concept of a Vocational Learning Zones and a distributed TAFE presence is a projection of the future in ten years time. It is, however, grounded in the reality of the development of the Townsville and Thuringowa region, current practices in learning space design and community based learning, government policy and the theory of teaching and learning.

The future is now.