

# NET\*Working 2002

## extra

## Bridging the Digital Divide

The NET\*Working 2002 online conference attracted more than 2,500 managers and practitioners from the Australian Vocational Education and Training sector and from overseas. Participants gave presentations and took part in discussions within a totally online learning environment. Here, Martha Goldman reflects on the NET\*Working conversations that explored the digital divide. Visit the archives at <http://nw2002.flexiblelearning.net.au>

Online learning means education and training are available to anyone, any time, anywhere – unless you happen to be on the wrong side of the digital divide. Those who are on the wrong side of the digital divide might not have access to PCs or the Internet. Then again, you could be right in the heart of a city and still not have the skills or access to the resources to reach your potential to learn.

Here, we take a look at the issues that prevent people from bridging the divide.

### WHAT IS THE 'DIGITAL DIVIDE'?

The term "digital divide" refers to a gap in access to information and communication technologies (ICTs). However, just because the technology is **available** does not mean it is **accessible**.

The divide is not simply a dichotomy between those who have the technology and those who do not. More important is the **"ability to access, adapt and create knowledge via use of information and communication technologies"** (Mark Warschauer, 2001). To illustrate his point, Warschauer says that users of Internet-based information may include **"a rural activist in Indonesia who has no computer or phone line but whose colleagues in her women's group download and print out information for her"** (2002).

'Bridging the Digital Divide'  
author Martha Goldman



In other words, it's a question of *what people do with the technology*, not simply whether they have it or not.

### BRIDGING THE DIVIDE

Providing the infrastructure, hardware and connectivity is a bottom-line requirement. Sustainable solutions need to address the cultural, institutional, economic and linguistic implications of using the technology.

### EXAMPLES

Here are some examples, drawn from NET\*Working 2002, where the gap has at least been narrowed.

#### Physical Access Issues

- such as insufficient computing and telecommunications infrastructure; high costs; or poor or unreliable service.

- Very few of the 2500 residents of the 11 communities of the Ngaanyatjara Lands in Western Australia have telephones. (Pam Collier 'VET in the Desert', Warburton)
- Residents around Nyngan in New South Wales pay as much as \$4.40 per hour plus the cost of a long distance call, for internet access providing only 6kps. Broadband satellite connections are available - for \$132 per month. (Louise Fisher in Year of the Outback, 'NSW Community Technology Centres')

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## Content Issues

**Content Issues include lack of content written in the primary language and content not designed for access by people with disabilities.**

- People with disabilities may require a range of assistive technologies. Web design that does not take this into account is inaccessible to many users.

(Melanie Sorenson, Ian Kenny, Rhonda Daniell, 'Workshop: Access 1 Step 1')

- In the Ngaanyatjara Lands, as in many Aboriginal communities four different Aboriginal languages are spoken. Proficiency in English language and literacy is limited. (Pam Collier in Year of the Outback, 'VET in the Desert', Warburton )

## Individual Capability Issues

**Individual capability issues include limited literacy or technology skills.**

- Some people don't use online communication because it will expose their literacy deficiencies. As forum contributor Hana puts it, "participation ... exposes not only a participant's traditional literacy skills but the whole new set of computer literacies that are called upon to communicate".

(Robert Pulling and Lyn Ambrose, 'Your first time', Forum: 'A Final Word As We Say Goodbye', Thread: 'What about dyslexia?')

## Social Capability Issues

**Social capability issues include insufficient community or institutional support.**

- Many employees in the VET system lack the skills, training, motivation, time and support to successfully engage in the use of ICTs for professional development.

(Fred Richardson, 'Pedagogy of the Distressed'; Martha Goldman and Peter Andrews in Year of the Outback, 'Online Tool for Indigenous Teachers')

## Physical Access

- Broadband satellite Internet connections are in community offices in each of the 11 communities of the Ngaanyatjara Lands. Yet distance can still be a tyrant – the connections are not available for general college use and, while there is one public access connection in the college library in Warburton, the communities are scattered up to 600km away.
- The Nyngan Community Technology Centre provides 24-hour access to Internet and video-conferencing facilities at a low cost, as well as training in the use of ICTs. Residents may need to travel 50km or more each way to access the centre while running the risk of hitting wildlife at night and encountering impassable roads during rain. But here is one success story:

**"In the beginning our members were mainly teenage boys 'from the wrong side of the tracks'. It took many weeks, but they gradually learnt that I trusted them with many thousands of dollars' worth of equipment ... Anyway, the police tell me that the crime rate dropped dramatically and now I have lost most of my original members because they have their own computers at home."**

(Louise, Question thread, 'NSW Community Technology Centres')

- Community Technology Centres (CTCs) have been established in rural communities across NSW to harness the social, educational and business potential of the Internet.
- Mt Isa TAFE's mobile computer unit travels to remote communities to provide training (Gary Wood in Year of the Outback, 'Outback Queensland – IT on Wheels'). Similarly, Megan Funston from Kalgoorlie, Western Australia uses a mobile unit with laptops for the 'Outback Learning Towns' project. The unit travels to towns delivering a blend of art and computing courses under a general adult education certificate program. ('Visual Stories – Indigenous Education in Practice in Alice Springs' discussion, Year of the Outback).

## Content Issues

- The 'Fungi Online' site featured in the Access 1 Step 1 presentation gives practical examples of how web designers can easily adopt **universal design** principles, which enable better access for vision- or hearing-impaired people and for those with limited literacy or slow bandwidth. For example, including **ALT tags** on images can greatly improve the learning potential of a web site. Imagine a vision-impaired learner who relies on a screen reader trying to make sense of the following:

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By including an **ALT tag**, the web designer gives the learner meaningful information:

**alt = "Photograph showing the bright-pink inverted caps of Hylicie Morosis growing on a dead twig"**

**ALT tags** are also helpful for learners who have slow bandwidth, as the text tag can be seen while the image is downloading. Designers should also think about providing audio transcripts – this not only makes the presentation accessible for hearing-impaired learners, it also helps people with different learning styles and those who wish to quote from a presentation.

- To overcome language and literacy barriers, **Greg Crowe** and **Christopher Brocklebank** from Alice Springs have developed a '**visual stories**' approach to training Aboriginal health workers in Central Australia. Content is presented in the known language in a visual format, allowing the learner to move from the '**known**' language to the '**unknown**' content, without the normal stumbling blocks of English language and literacy. The material is sent to remote communities on CD.



## Individual and Social Capability Issues

- **Fred Richardson**, in 'Pedagogy of the Distressed', argues that many learners who are failing with ICTs already have the entrepreneurial skills needed for the global economy. For example, they can fix a broken oil sump in the middle of the desert with no tools. The problem is the way skills are being taught - learners (and employees) gain "cul-de-sac" skills but have gaps in the "big picture" of how ICT hangs together. To overcome this, **Fred** suggests:

**"(1) Until recently, the main players in the IT game have had either 'nerd skills' [engineering, programming, support, etc], or 'herd skills' [need to operate accurately in the IT herd, users of software in offices, etc]."**

**"(2) Sure, the pedagogical approach I am advocating has to cover the basic aspects of how to drive software packages. It's essential to help employees to get more leverage out of their computers. But what's beyond basic skill transmission? The real gem to uncover is existing talent [not related to western mapped intelligence]. It's really about giving cultural expression free reign; they are not nerd or herd skills ... but 'bird skills'."**



“With the material we have so far introduced, very little use is made of the keyboard ( if any ). Watching people use the material, most are able to jump right in and click with the mouse to where they want to go, with very little instruction.”

**Christopher and Greg**

'My thoughts on visual stories and the CD' thread



- Pam Collier's presentation on the Ngaanyatjara Lands concludes:

**"As community members develop their skills – literacy, computer and technical – Yarnangu of the Ngaanyatjara Lands will be able to make more and more use of new technologies and a greater diversity of learning methodologies."**

Two essential elements for successful training in this context were identified:

**Flexibility** - **"Flexibility, in every sense of the word, is our middle name - without it we wouldn't survive. So we try to deliver training in the most relevant way for our students."**

(Pam - Training Facilities thread)

**Building Relationships** – **"I have also found that, because Indigenous people are strongly person orientated, we often need to develop trust through the 'skin' name and a longer-term relationship with people. Too often we find trainers who come for a year or so and then move on, disrupting the flow of learning."**

(Geoffrey - Training Facilities thread)



These two elements were echoed in many of the presentations and are essential in any community, not just Indigenous ones. If information and knowledge are going to flow to and from those people who are on the wrong side of the digital divide – the non-English-speaking, the differently-abled, those lacking skills or the confidence to engage, Indigenous people, and remote or poor communities – many bridges need to be built.

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## REFERENCES

NET\*Working 2002

<http://nw2002.flexiblelearning.net.au>

The Digital Divide Network

<http://www.digitaldividenetwork.org>

What is the Digital Divide?

<http://www.gse.uci.edu/markw/dd.pdf>

Warschauer, M. (2001)

Rethinking the Digital Divide

Warschauer, M. (2002)

<http://www.gse.uci.edu/markw/papers.html>

## CONTACTS

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# Australian Flexible Learning Framework

## Supporting Flexible Learning Opportunities

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