

E-learning for Target Learner Groups – Youth

**Environmental Scan Research Paper to inform the
2005 E-learning for Target Learner Groups Project**

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Introduction

Background

The 2005 Australian Flexible Learning Framework (2005 Framework) is a new strategy which builds on the 2000-2004 Australian Flexible Learning Framework (Framework). It has identified the need to give priority to supporting the take-up of e-learning across a broad spectrum of vocational education and training (VET) clients and providers. This will be achieved via three components which aim to:

- strengthen the role of industry, individuals and communities in shaping VET provision to meet their needs
- build the capacity of the VET workforce and VET organisations to use information and communications technologies to improve service delivery
- improve the policy, regulatory and system environment and VET business models which affect the uptake of e-learning.

Objective of the 2005 E-learning for Target Learner Groups Project

The E-learning for Target Learner Groups Project, to be undertaken by the 2005 Framework, will focus on e-learning for two target groups: learners with disabilities, and young people in the 15-19 age group (including VET in Schools, disengaged youth and school-based apprenticeships). Managed under the same umbrella project, the two target groups will be the subject of their own sub-projects. This Environmental Scan will underpin the Youth Project. The Australian Disabilities Training Advisory Council (ADTAC) will undertake the Disabilities Project and both projects will be conducted in a spirit of cooperation and collaboration.

The Youth Project will undertake a study of the context, coordination and networks in each State and Territory, and identify priority programs and emerging technologies relevant to young people.

The outcome of the Youth Project will be guidelines for a number of innovative provider projects for youth to take place over the following twelve months. It will also identify priorities for learning object development or repurposing for this learner group. Support in the use of e-learning through other 2005 Framework products and support networks such as Toolbox Champions and LearnScope will be given to training provider staff who are running programs for young people and learners with disabilities. On-going relationships with peak support groups will promote the sustainability of the initial outcomes.

The objective of the E-learning for Target Learner Groups – Youth is:

To motivate and enhance the employment skills of young people through innovative e-learning programs and resources.

Purpose of the research project

The purpose of this research project is to provide the 2005 E-Learning for Target Learner Groups – Youth Project team with an up-to-date environmental scan of recent relevant research, projects and other initiatives both within and external to the Framework that will inform the 2005 Project.

Scope of the research

The scope of the research project is to:

- carry out an environmental scan identifying recent and relevant research and / or Projects/initiatives across the education sector, community and industry both nationally and internationally that:
 - focus on issues for young people in the 15 – 19 age group including VET programs with a focus on youth, VET in Schools, disengaged youth and school-based apprenticeships
 - identify strategies / recommendations that motivate and enhance employment skills of young people through innovative programs and resources using new technologies including e-learning
 - identify existing Framework resources that are relevant to the 2005 Project objective including outcomes from Flexible Learning Leaders, LearnScope, New Practices in Flexible Learning, Resources in Teaching, Learning and Assessment and Policy and Research Projects.
- provide a brief description of each of the research / Projects identified including any key findings/ executive summaries and include contact details and links to relevant research / Projects where possible
- provision of all resources as electronic files
- identification of conferences that may inform the Project.

Findings

Several hundred research reports, projects and reviews were scanned and only those with direct relevance were recorded on the database (provided separately). One hundred references have been recorded and of these, 34 are highly relevant, or contain concepts that are highly relevant to this research project.

Features of young learners

What is common to all generations and all groups is that they want to be able to choose the how, when and where of their learning (LeCornu, 2004). Young learners who have been brought up in an environment of rapid change and simultaneous exposure to a range of different electronic media, are generally more polyfocal than earlier generations (Kelly 2004, p1 citing Scollan 1999). Today's young people are "adrenaline junkies who want the quick fix for information" (Kelly 2004, p1).

Young male learners do not schedule quiet time to study online. Their login pattern is "irregular with a shorter timespan and scattered frequency" (Framework 2003, p9). Theo Kavadis (2003) found that young trade learners need their online learning to be interactive, with small amounts of text (p4).

On the other hand, Mary Dickie and Ingrid Fitzgerald (2004, p52) found that for many female students, online delivery is a deterrent and does not encourage participation. 'Women appear to prefer interaction with teachers and other students, and appreciate the support and social contact offered by face-to-face delivery.'

Gary Woodill (2004) in his paper *Where is the learning in E-learning?* identifies features of young people:

While many young people of today have a much wider view of the world than their parents, can juggle several cognitive tasks at the same time, are more relativistic and tolerant, and face new situations and change as a challenge, many young people also have a more fragmented sense of time, a reduced attention span, a lack of faith in institutions and explanatory narratives, a reduced sense of place, community and history, and a sharply reduced vision for a personal or collective future (p11, citing Birkerts 1994).

A weblog by Flexible Learning Leader Janine Bowes refers to an Educause conference paper by Diana Oblinger (*Boomers, X-Geners and Millennials - understanding the new students*) which describes the ten attributes of the information-age mindset:

1. Computers aren't technology.
2. The Internet is better than TV.
3. Reality is no longer real.
4. Doing is more important than knowing.
5. Learning more closely resembles Nintendo rather than logic.
6. Multitasking is a way of life.
7. Typing is preferred to handwriting.
8. Staying connected is essential.
9. There is zero tolerance for delays.
10. Consumer and creator are blurring.

(<http://www.reflections.motime.com/category/1283>, 2004).

Similarly, Eve Drinis and Amy Corrigan (2004) *Confessions of an e-learner*¹ describe the typical course paradigm:

- group settings which don't allow learning to be adaptable to the different needs and expertise levels of each learner
- general topics often fail to give students the help they need, which is specific information about how to perform a particular task or understand a particular topic
- address business needs from a viewpoint 10,000 miles up – providing minor details and specifics in small, easy-to-reference chunks can have more of an impact on learner performance than the broad overview of business needs
- hours or days in length when most people do not have time to spend days or hours in class
- courses are especially viewed as a waste of time if only a fraction of the material is new or relevant to the learner
- material support only provided in-class even though students often retain less than 20% of what they learn in a classroom setting; failing to provide students with materials that can be used on the job is counterproductive; training materials should be organised for later reference so users can find relevant topics or task information quickly and easily while on the job
- testable learning objectives - sometimes learning objectives are developed simply for the ability to test the learners, rather than based on learning needed for future success.

Drinis and Corrigan explain why the course paradigm doesn't work for online learners:

Top 5 Confessions — Where the Course Paradigm Falls Down

- **Confession No. 1: I don't want to be tortured with useless information.** Don't torture the learner with five hours of fluff to fill space around a half-hour of meaningful content. It's cruel and unusual punishment and also is the best way to watch your online learning usage statistics plummet. Shorter, just-in-time, on-the-job, accessible learning modules are growing in popularity. Audiences will find ways to complete 10 to 15-minute modules long before they open a two-hour course. Learners want knowledge in a form that is most efficient and which provides immediate performance improvement.
- **Confession No. 2: I can't always know when I'll need to know something.** Instead of wading through an online course for an hour, wouldn't it be great if students could get relevant tips, tricks and information about a product or technical point right when they need it? For example, when Fremont, Calif.-based LAM Research Corp planned staff training for the SAP ERP system it was implementing, the company created "courselets" that focused on particular transactions or processes that needed to be completed using SAP. These courselets, typically 10 to 15 minutes long, supplied policy and procedural information about the transaction as well as the steps for completing the task. Everything the learner needed was available when it was needed and provided only what was required at the time. This connected knowledge and performance enhancement tools with the people who do the work. They didn't need to schedule training far in advance; they could take each courselet when the need arose.

¹ It is not clear the age of these authors, but their comments reinforce the responses from young e-learners, and they are worth including for the context provided.

- **Confession No. 3: Learning is great, but I need to know how it fits into my job.**
The number one concern of employees is completing their job tasks, which comes as a surprise to some managers. The best way to energise a room full of adult learners is to show them how a skill or concept will make them better at what they do. Workers participating in e-learning must know how new information will make them more efficient or better at their job.
- **Confession No. 4: Sometimes learning objectives are just plain dumb. What I need is good reference material.**
Learning objectives are often created simply because the instructional designer knows the course is supposed to have them. The goal should be to keep the training relevant and based on job-related needs. If we abandon the rigid structure of learning objectives, we can break training courses into smaller chunks and provide more options for searching and pushing information to the learner by providing a wealth of reference material online.
- **Confession No. 5: I'd like to show my boss that the training improved my performance.**
Online courses are often designed with a classroom paradigm in mind, but courses should be built to support performance goals. If we build courses inappropriately, make them too long or not targeted enough, the metric will never reflect whether learning was successful. If the training is more focused, performance-based, and built around real results, bosses will be more likely to pay for training.

The National Youth Roundtable's document *Communicating with Youth in Australia* says 'young people only search the net for entertainment and fun stuff - if your site doesn't have Realtime 3D online gaming or free music downloads, you're going to need to help young people to find it' (2004, p8).

Much has been made of Marc Prensky's terms 'digital natives' (those born to the technology) and 'digital immigrants' (those who have come to the technology later in life). Prensky uses this concept to underpin a wide ranging set of approaches, from games theory to the inappropriateness of an education system that was designed for an entirely different set of students (2001, p1). It should however be recognised that Prensky's thoughts, while captivating, are not necessarily underpinned by sound research, as explained by Mary Aquino:

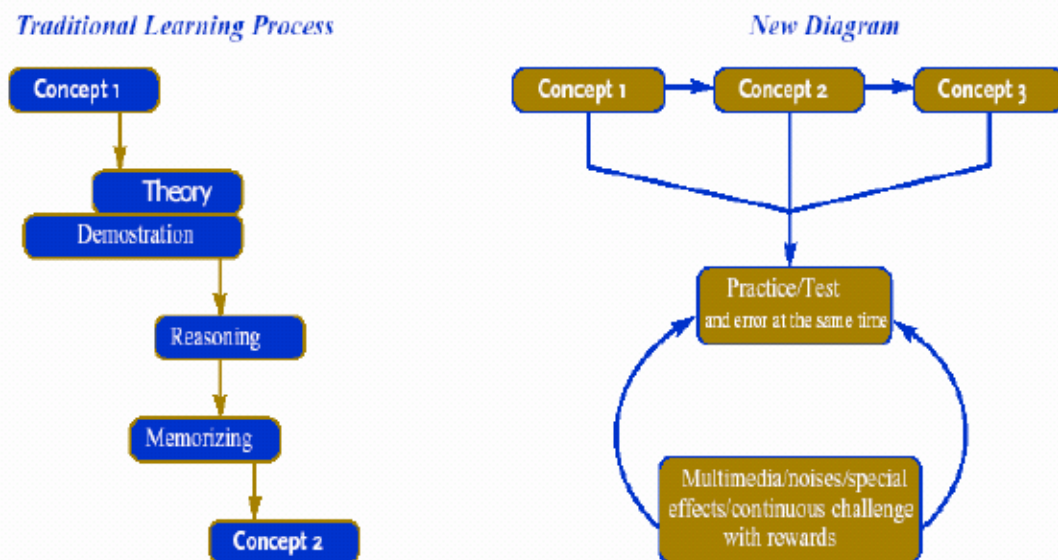
In response to shifts in scientific and psychological thinking coupled with the inescapable impact of technology on cognition and behaviour many contemporary researcher/practitioners are calling for a comprehensive rethinking of teaching and learning methodologies. Prensky (2001) writes largely from personal observation as a designer, trainer and futurist. His work has a distinctly promotional, unacademic tone and his thesis draws on recent and therefore limited research in psychology and neuroscience. However, the essential intuitive accuracy of his observations and the power of his digital native/digital immigrant metaphor have found a receptive audience amongst many teachers and trainers genuinely looking for ways to engage young learners (2004, p3).

While Aquino agrees that the native/immigrant metaphor is useful, the term 'digital natives' applies most correctly to people who use the technology in a 'native' way and they can be of any age. On a population level, young people are more likely to be 'natives', but there are large numbers of young people who lack access to digital technologies who are therefore immigrants. Assumptions that all young people are digital natives are likely to be damaging when working with young people from groups such as low socioeconomic, New Arrivals (recent immigrants to Australia) and Indigenous young people. Roger Holdsworth (2004) reinforces this with findings that recent studies indicate the take up of technology in low socioeconomic and/or

geographically isolated areas is significantly less than in advantaged urban situations (p14). In fact, Terry Clark's 2004 research into Adult and Community Education (ACE) in Queensland (p36) found that 98% of young Centrelink clients were computer illiterate.

Philios Spika (2003) reflects that digital natives do not learn by reading manuals, or by using step-by-step instructions. The basic foundation of 'game' learning is test, error, the challenge, the 'whole at the same time' (p6). He illustrates the difference between the traditional and new learning processes as:

Differences between the traditional and new learning process



Mardi Dwyer, in her *Flexible Learning Leaders Report*, identified seven themes in young people's learning:

- kids are under more pressure
- face-to-face and experiential training are best
- young people need to produce a product
- they want to be treated like adults but aren't ready for self-direction
- they have a massive need to belong to a peer group
- they have difficulty with emotional management
- young people have higher IQs (2003, p1).

Kristine Peters and Carolyn Lloyd (2003) in their research into demand features of online learning found that learning support was a prominent issue. Young people need additional learning support if studying online, with blended delivery seen as the best option as it could provide context, socialisation and face-to-face monitoring of student progress (p30). Young learners want training in 'bite sized chunks' - just in time and just for them (p19), and these chunks of training need to articulate into formal accreditation – even if they weren't 'bought' as part of an enrolled course (p28).

Peter LeCornu found that employers report that young employees expect any training they receive will involve technology (2004).

In terms of the development of the online training market, Peters and Lloyd (2003) found that young people were an under-developed market segment as they tend to be

experienced and sophisticated web users and often prefer to study using computers than pen and paper, however assumptions made by training providers about the needs and interests of young people are often incorrect (p30).

Sandra Robinson (2003) found that school students prefer mixed delivery to pure online (p8), that students need to operate in the digital age, which involves digital literacy, inventive thinking, effective communication, and high productivity (p3) and that materials need to allow deep learning (reflection, analysis, evaluation and making judgements) (p9).

Spika suggests that strategies to make the process more appealing include:

- gameplay: I decide the how, when and how long
- competitiveness: I learn, and that enables me to win and not to lose
- reality: I learn what is really useful through lifelike situations (simulations)
- continuity: once getting through the course, I move to another level, with similar rules and interfaces, but with more difficulty and/or added factors
- involvement: I choose the way and strategy to move within the learning experience
- realism: I move according to new technological advances (multimedia, 3D design)
- accessories: while I am doing the course, I have the opportunity of choosing additional modules in related subjects (2003, p7).

Jill Attewell and Carol Savill-Smith (eds. 2004) reflected that the use of games has the potential to balance young people's desire for excitement with effective and ethically sound learning materials (p6) and that mobile learning has the capacity to build in collaborative learning, information sharing and group activities (p178).

The challenge of our times is that learners use many different devices for their learning (Ahonen, 2003, p16). Young learners want to choose the media they can use to learn. Kristine Peters and Carolyn Lloyd (2003) found strong demand for hard copy texts to support online studies. Discussions of the way young people learn (and the gaps in the literature on this subject) led to two examples from the Project team's families: Bruce Enting's daughter has formed an informal study group with friends where information is exchanged via Messenger. Kristine Peters' seven year old daughter does research for school projects by searching the Internet while on the telephone to her friend who is doing simultaneous research - they compare findings and give each other leads as they work (and have a good chat at the same time).

Pedagogy, andragogy, heutagogy and constructivism

Stewart Hase and Chris Kenyon, in their peer-reviewed article *From Andragogy to Heutagogy* (2001) argued that the theory of learning had moved from pedagogy (the teaching of children) through andragogy (self-determined learning) and trainers should now be considering the application of heutagogy, which develops individual capacity through learner-directed rather than teacher-directed training. Hase and Kenyon state that 'heutagogical approaches to education and training emphasise the humanness in human resources, the worth of self, capability, a systems approach that recognises the system-environment interface, and learning as opposed to teaching'.

A shift toward heutagogy would enable the control of learning to shift to the learner through holistic development of an independent capability, capacity for questioning one's values and assumptions, and the critical role of the system-environment interface (Hase and Kenyon 2001).

However, this philosophy is not without its drawbacks. Roslin Brennan's 2003 National Centre for Vocational Education Research (NCVER) report *One size doesn't fit all* found that the assumption that young online learners were highly independent, highly motivated and self-supporting was not supported. Young people had a clear need for pedagogical teaching – with highly structured, supportive role-modelling by the teacher (p13).

Simon Geddes rebuts the findings of other authors (particularly Knowles' theories on pedagogy and andragogy²) in his paper *Mobile Learning in the 21st Century: benefits for learners* (2004), stating that younger people may be more suited, and more able, to learn independently than previously believed. Geddes cites Thorhouge's recent research into problem solving in ill-defined situations which found that youth are better suited to a self-directed, experimental style of learning because they live in a more ill-defined environment, thus suggesting that young learners are capable of learning within an andragogical style environment (p5). Geddes concludes that the key for success in using an andragogical methodology with young people is for the teacher to be able to work in the student's 'Zone of Intervention'. The principle of the Zone of Intervention is that learners facing problems can be successful only with guidance from an instructor or more advanced peer that relates to the problem (the zone) and intervention outside of this zone will be neither appreciated nor necessary (p5, citing Kuhlthau 1997).

Mary Aquino (2004) reflects on Dewey's (1916) fundamentally constructivist definition of successful education as providing students with "something to do, not something to learn" (p14). Brennan, McFadden and Law (2001) define constructivism as "a philosophy of learning predicated on the idea that individuals 'construct' new knowledge as they integrate new experiences and modify existing patterns" (p50).

Constructivist methodologies are seen to be relevant because they ...

are based on the realisation that the skills developed by collaborative, process-based learning are essential for contemporary professional and personal survival. Skills in critical thinking, problem solving and a capacity to work effectively and empathetically in a team, equip learners to manage themselves and others in a rapidly changing, deregulated economic climate in which frequent shifts of job and the requisite training accompanying this volatility are becoming the norm (Aquino, p5).

Brennan, McFadden and Law (2001) in their milestone report *All that glitters is not gold: online delivery of education and training*, reflect that constructivism is just one learning methodology – one that should be applied with care:

The recognition of the different styles of learning implies that there is a need to take advantage of the multiple instructional strategies that are available. Mass-distributed learning does not always meet the preconditions for engagement. Similarly, the newer focus on CMC [computer-mediated communication] and a constructivist approach to teaching and learning may not necessarily hold all the answers either (Small &

² Knowles describes pedagogy as the art of teaching children, while andragogy is the art of assisting adults in the learning process. Assumptions from the andragogical model include that learners need to know why they need to learn; they want to know its value in advance; they want to be responsible for their own learning, and they have a task or problem-centred orientation to learning. Conversely, the pedagogical model assumes that students do not need to know why they are learning, students view themselves as dependant on the teacher, students become ready to learn when the teacher tells them and situated learning is of little value to learners (Knowles 1984 cited by Geddes p4).

Grabowski 1992 as cited in Ross & Schulz 1999) (p30).

Small and Grabowski (1992) warn that too much user control can lead to navigation decisions resulting in either skipping pertinent content or leaving the tutorial program before all content has been thoroughly covered (see also Schroeder 1994). Similarly, learners who are less confident and who have low levels of technological and personal self-efficacy may find the constructivist environments threatening and confusing (Dillon & Gabbard 1998; Wallace 1999) (p32).

Issues relating to the delivery of e-learning

There is currently an unusual, perhaps unprecedented, lack of symmetry between age and expertise which is changing the power relationships in arenas such as the classroom, the workplace and the community (Guthrie, 2003, p30).

Sphika (2003) concludes that it is not feasible to train professionals of today with tools of the past on how to manage the future. 'Training has to evolve and we cannot become obstinate, and use immigrant's learning formulas to teach natives. This will discourage them and, even worse, it may impede them to learn' (p8). Lack of provider understanding of the capabilities and limitations of the online medium mean that much early online training confused content and instruction, 'We say, "read a Web page" instead of a textbook. That's not constructing new knowledge. We are transmitting information and calling that education,' (Vail, 2001, p6).

Bruce Golding, in a paper presented to the 2001 Australian Council for Educational Research (ACER) conference stated that online learning as a stand-alone learning tool in 2001 is 'dead in the water' and the prerequisites to learn online are only evident in rare instances where motivation, lack of alternatives, technological skill and existing networks coalesce (pp14-15).

Kilpatrick and Bound (2003) found a range of aspects that lead to low completion rates of online learning:

- lack of understanding of amount of work involved
- lack of appropriate support
- early difficulties in getting going with the content/technology (lack of induction)
- lack of written support material
- not having met teachers/peers face-to-face
- teachers' lack of familiarity with the technology
- slow feedback
- an external enrolment process that did not allow teachers to assess numeracy and literacy.

The main problems for VET in Schools students who are studying online, identified by Sandra Robinson (2003) are: technological and Internet access, lack of IT skills and communication processes by teachers, and the lower degree of effectiveness in learning practical skills online. Learners also need to be prepared to learn online, and need support for different learning. Assessment should be valid and fair. It was acknowledged that teachers' work is different: they need different communication and relationship building skills; they need to manage time and set limits on when students can contact them and they need to constantly evaluate their progress (p9).

Peters and Lloyd (2003) identified the following problems with current online courses and content:

- boring materials with too much focus on click-and-turn presentations

- information technology costs and problems, technical failure, poor bandwidth, the need for high-volume modems, lack of compatibility with firewalls
- cost to students, primarily related to technology problems and telecommunication costs, but also in additional time involved in studying online
- insufficient attention to the selection of students who have the information technology and learning management skills; poor preparation, resourcing and support of learners (pp25-26)
- younger VET students were found to be more dissatisfied with their online experience than older students (p8).

Gary Woodrill is critical of the general approach to interactivity in e-learning, which he says 'consists of turning pages through clicking on hyperlinks'. Woodrill encourages developers to build in

interactivity based on feedback loops, whereby the action of one participant, the learner, results in an action by the other participant, the computer, in a back-and-forth exchange. With feedback, learners reflect on what is happened by seeing the results of their actions (p11).

He sees the reasons for failure of e-learning to date as:

- speed to market – a rush to adopt by technophiles and early adopters has meant that the e-learning industry has not come to terms with the mass market (also identified by Peters and Lloyd, p20)
- the focus has been on new technology, not instructional design
- boredom, very few instructional materials that deeply engage the mind, and interactivity is simply page turning
- lack of understanding of teaching and learning, much e-learning is not designed by educators
- lack of understanding of the unique teaching advantages of electronic media (pp4-5).

Woodrill sees the steps that need to be taken for e-learning to succeed as:

1. Learners and instructors must each be prepared for working with e-learning.
2. The focus of the industry must shift from electronic technologies to electronically mediated teaching methods.
3. New instructional activities and strategies that use the unique characteristics of interactive and networked electronic environments need to be developed and made easy to use.
4. New understandings of both learning and the differences in generations of learners need to be articulated and incorporated into instructional design, especially new research on brain functioning and learning, and on 'embodied cognition' (Varela, 1991).
5. The computer interface with learners needs to be broadened beyond the computer screen to new configurations such as wearable computers, digital paper and ink, and invisible embedding of computers in the environment (p5).

Mentoring was considered in the 2003 work by Sue Kilpatrick and Helen Bound *Learning Online, Benefits and Barriers in Regional Australia*, who identified that mentoring works well when timetabled, when there is large peer group involvement to keep students engaged, when both teacher and institute mentors were used and both took on different roles.

Louise Housden (Australian Flexible Learning Framework: *Assessing Online: A guide for VET professionals*, 2000) discussed the outcomes of the Retail Toolbox, which was designed for younger learners.

We assumed that the retail training package would attract the same sort of learner we get at TAFE – younger people who are not well motivated study-wise or career-wise. When we actually started running the course we found that more adults were attracted to it, more independent learners.

Housden reflected that the things they would do differently in future were:

- not take such a pedantic approach, but rather a more holistic one
- take the smaller tasks and incorporate them into projects
- use a portfolio approach.

Frank Bate and Jean McNish (2003), featured in the Framework's *Assessing Online* resource identified that successful assessment approaches used: role play, a range of activities and tasks, strong visual feedback and the integration of online communication with tasks.

While it would be untenable to expect members of our society to acquire conventional literacy in the form of reading and writing skills entirely through their own self-directed efforts, similarly it is becoming increasingly inappropriate to expect people to develop these other vital literacies in this adventitious way (Guthrie, 2003, p35).

There is nothing intrinsic to the medium that encourages the broad range of students to take advantage of these features... The literacy demands and cultural homogeneity of many online courses and modules raise questions about the adequacy of the skills of students from a range of groups to cope with this medium... In face-to-face classrooms, diversity is an asset. In an online environment it may be a distinct disadvantage. (Guthrie, 2003, p68)

Finally, Terry Clark (2004, p36) observed that while e-learning is good for gathering information, it may contribute to a decline in higher order thinking processes such as critique and evaluation, and that e-learning may be socially isolating for auditory and kinaesthetic learners.

Rural and remote issues

The issues of e-learning in rural and remote areas are complex. Well recognised e-learning problems in rural areas such as lack of adequate bandwidth, unreliable Internet connections, cost of telephone and Internet, cost of travel and accommodation and lack of learner support (Peters and Lloyd, 2003, p20) hide a greater problem of isolation. Parents of young learners reported to Peters that both they and their children preferred to undertake study in a group situation to provide much-needed social interaction, and that the ideal delivery of training was a blend of block classroom sessions backed up by distance or online delivery, and that the course should provide hard-copy materials so that study could continue when Internet was not available (p35). The growing number of telecentres in rural Australia, which provide a group learning environment with Internet access, creates opportunities for online delivery through learning groups that provide peer support for a range of different courses studied in a group setting.

A recent NCVET study into the implementation of training packages in rural Australia (Clayton et al., 2004, pp6-7) found that low participant numbers meant lack of training provider resources to deliver training and a reduction in the diversity of training; that

isolation contributed to the difficulties experienced by learners and the capacity of providers to attract skilled staff; and that there was insufficient coordination of delivery and marketing. In addition, most training was directed at supporting primary or local industry and small business and that if learners wished to undertake training beyond Certificate IV, they either engaged in online training or left their community.

Bruce Golding's 2001 research identified great divides in learning between city and rural areas and that youth learning pathways in rural and remote Australian towns are not always a 'pathway to somewhere'. Penalties for not learning are severe, but the viable pathways are most limited for those who get off track (early school leavers, people with low formal literacy, people without access to or encouragement from a family or community learning culture) (p13).

Golding also found that in small and remote communities the cost of delivery of formal training is less viable, the options for young people to learn through community owned and managed organisations become more important, and these organisations need to develop a range of skills (producing, accounting, managing, coordinating and marketing) in young people if they are to retain population (p14). There is a tendency for adult learning organisations in small country towns to be managed, controlled, staffed and patronised primarily by women and hence men are disengaged from learning. Women appear better at making a link at an early age between the need to keep learning and employability (p15).

Indigenous

Barbara Pitman, Flexible Learning Leader (2004) has found that Indigenous Australians living and working in remote community settings embrace technology with enthusiasm. 'What is important is the context, and how much somebody's first world view determines what technology is used and why'. Tiga Bayles (attrib) agrees that 'e-learning will probably work well in Indigenous communities because being locally customisable, it doesn't pretend to be a one-size-fits-all solution' (Wilson, 2004).

Frankie Forsyth provided unpublished material from the Action Research and Process Management Conference (2004) that described good practice in flexible learning with Indigenous communities. The key strategies were to videotape the stories of older people so that they can be preserved. This approach ensures the handing on of information and knowledge, ideas and techniques so that people growing up in a society need not start from scratch but can have access to the accumulated experience of others (citing Catherine Behrt). People come together to help each other learn, to use self reflective practices and deliberate change through the sharing of action stories about what is happening and why, and to reflect on what they are doing and why.

Jeff Hunter from Spencer Institute has used similar principles to develop cultural awareness material based on Aboriginal story telling in the Interactive Ochre CD-ROM which 'models the transfer of cultural knowledge using an educational "infotainment" concept, putting relationships first, and information second' (Australian Flexible Learning Framework).

Dorothy Lucardie's *Building Sustainable Practice: engaging remote Aboriginal communities - Establishment and Implementation Guide* (2003) identified that Aboriginal communities were very positive about the opportunity to look at and use new communication methods. The highest enthusiasm was for approaches that used music and interactive multimedia (from both individual learners and learning by the community). Lucardie found that participants saw the Internet as useful and necessary,

but for many, English literacy and technical problems mean that web, email and online discussion forums could not be used for learning. It is important that sustainable practices are implemented so that use of the Internet does not become a 'one off' training program (Lucardie, 2003, p39). Marcus Ragus has also trialled successful mobile learning (m-learning) strategies, using input from young Indigenous people to design the resource (Murray, 2004, p6-7).

Lucardie also noted that learning is effective when it is a community experience, rather than an individual experience, ideally 'learning in families for the benefit of the community' (p17). However, many Indigenous communities have experienced a run of pilot projects that typically cease when the money runs out and this exhausts community energy that could have been used elsewhere. Training programs must look long term and 'embed their delivery on a sustainable basis' (p41).

The *Learning Pathways* report (Tankard and O'Kelly, 2004) referring to the report *What Works?* (2000), which identified the success elements in Indigenous projects, found that a significant level of Indigenous adult involvement was the key feature of the successful projects (p6). It is important to listen to young Indigenous people to get them to feel better about all sorts of issues in their lives, to have access to strong, wise people who can give them feedback and direction when it's needed (p6), and a sense of belonging to a family group (p13). Balatti et al. (2004, p5) remind us that Indigenous students belong to a number of client groups with different needs and expectations and the best outcomes are achieved when these are recognised.

New technologies

Three emerging technologies that will be relevant to the E-learning for Target Learner Groups Project were reflected in the literature search: m-learning (mobile phones, palm-sized computers, computer/video games), MP3 and other audio devices, and multi-author web software such as blogs, wikis, 'do-it-yourself' websites and online journals.

M-learning

Jill Attewell and Carol Savill-Smith, in their report *Learning with Mobile Devices: research and development* (2004) found that, apart from in Japan where i-mode (the Japanese mobile Internet service) appears to have gained a significant market, the use of mobiles for learning is rare (pp 4-5). This report will be a useful reference for the E-learning for Target Learner Groups Project, as it contains papers based on the international MLEARN 2003 Conference in London that cover:

- mobile learning and social inclusion: focusing on learners and learning (Attewell and Savill-Smith)
- self-produced video to augment peer-to-peer learning (Brandt, Hillgren and Björgevinnsson)
- individualised revision material for use on a handheld computer (Bull and Reid)
- take a bite: producing accessible learning materials for mobile devices (Colley and Stead)
- participatory design in the development of mobile learning environments (Danielsson, Hedestig, Juslin and Orre)

- using mobile devices for the classroom of the future (Dawabi, Wessner and Neuhold)
- learning can happen anywhere: a mobile system for language learning (Kadyte)
- SMILE: the creation of space for interaction through blended digital technology (Luckin, Brewster, Pearce, Siddons-Corby and du Boulay)
- exploring the potential of a games-oriented implementation for m-portal (Mitchell)
- usability and accessibility of personal digital assistants as assistive technologies in education (Rainger)
- evaluation of a mobile learning organiser and concept-mapping tools (Sharples, Chan, Rudman and Bull)
- designing scalable, effective mobile learning for multiple technologies (Stone)
- fragmentation in mobile learning (Syvänen, Pehkonen and Turunen)
- a task-centred approach to evaluating a mobile learning environment for pedagogical soundness (Taylor)
- designing for learning or designing for fun? Setting usability guidelines for mobile educational games (Thomas, Schott and Kambouri)
- mobile learning – evaluating the effectiveness and the cost (Traxler).

The m-learning project is a three year, pan-European research and development study to provide literacy and numeracy learning experiences for young adults who are not in full time education (Attewell and Savill-Smith, 2004, p3).

In Australia, Jill Jamieson from Swan TAFE is looking at SMS (Short Message Service) as part of her New Practices in Flexible Learning Project (2004):

This Project targets 15-19 year old students who have not previously succeeded in traditional classroom-based learning, and examines the option of mobile learning for vocational education and training (VET) providers. The Project recognises that mobile phone use has become a pervasive communication tool among youth culture, and will create recommendations and guidelines for VET providers on using this communication technology to support a sustainable learning culture with disengaged youth.

Multi-authoring via web

New web-based multi-authoring and newsfeed technologies are creating huge opportunities for education and training (at least according to the 'early adopters'). Weblogs (blogs) and wikis are two examples. Weblogs are free, easy to use web sites that allow visitors to enter information. Wikis use a very simple HTML (hypertext markup language) that give users the ability to insert tasks and links in a blog environment – effectively a website that has open editing at all levels.

As would be expected, a web-search on blogs returned a huge number and range of sites. An article by teacher Will Richardson (2004), (*Supervisor of Instructional Technology, Hunterdon Central Regional High School*) on the *Information Today* website (see References for web address) made the following comments on the use of blogs:

Educators have been slower to adopt Weblogs for a variety of reasons, among them access, privacy, and security issues. But as more and more people get on the blog

bandwagon, more and more teachers and schools are starting to experiment with the technology as a way to communicate with students and parents, archive and publish student work, learn with far-flung collaborators, and 'manage' the knowledge that members of the school community create.

In an *Educause* article, Brian Lamb (2004) described wikis:

Unlike weblogs, wiki pages are rarely organised by chronology; instead they are organised by context, by links in and links out, and by whatever categories or concepts emerge in the authoring process. And for the most part, wikis are in a constant state of flux. Wikis work great as shared online sketchpads or as spaces for brainstorming. They are perfect for creating perpetually updated lists or collections of links, and most users can instantly grasp their utility as informal bulletin boards. Because it takes only a couple of seconds to set up a new page, no purpose is too trivial (p38).

Lamb sees the benefits to educators of wikis to be a low cost, effective communication and collaboration tool that allows reading, revision, and tracking of drafts. Wikis discourage 'product oriented writing' while facilitating 'writing as a process' and wikis ease students into writing for public consumption (p44).

Educational blog sites, such as the examples below, provide other ideas and opportunities for blogging as a teaching tool:

- <http://www.educational.blogs.com>
- <http://www.edublognews.com>
- <http://www.caxton.stockton.edu/BlogOnBlogs>
- <http://www.techlearning.com/story/showArticle.jhtml?articleID=18400984>

Online journals and do-it-yourself (DIY) websites such as tripod.com and geocities open up a range of new opportunities for online delivery that are not highly dependent on sophisticated literacy. Bruce Enting's use of DIY websites for students who disengaged from classroom-based literacy, produced 'prolific outputters of text' (Coghlan, 2004, *Language*). Teachers would be very aware of the need to provide alternative ways of expression for students who are not reaching their potential through traditional delivery and assessment. Coghlan illustrates the use of electronic media to address the needs of these students with the following example:

I will never forget the day a young man fresh out of Multimedia Studies at our Institute came to apply for the position of trainee in the materials production arm of our work unit. He shyly mumbled a few words of introduction and proffered a CD as an example of his work. We put the CD on and out came an amazing display of animations, graphics, music, narration, and written text in a compelling multimedia compendium of resume and portfolio. It was simply stunning, and he got the job.

MP3 and audio devices

Ian Whitehouse of GlobalNet ICT reported on a recent project with young people that involved assessing and modifying Flexible Learning Toolboxes to better suit a young audience. Not yet published, the emerging findings of that research are:

- young people want choice in their e-learning
- they want information in small chunks
- they want assessment embedded within the learning and on-going
- learning should be empirical and cumulative – learning building on concepts

- the project group (and focus group with New Zealand students) were very keen on MP3 (less so on i-pod because of the cost), used in conjunction with software that converted text to audio files, so that they can have a choice of how they receive information (text, online, audio); this reinforces the just-in-time, just-for-me findings of other research, they want to use the learning style that suits them on the day
- they also liked PowerPoint with the lecturer's voice running behind the visuals
- students are very 'tuned in' to blogging because they can cover one topic at a time and the learning is in small pieces, but they were not interested in wikis.

Comment on the literature

The literature search revealed an uneven coverage of the issues facing young people studying VET electronically. While there is a wealth of material about online learning, little of it is concerned specifically with the learning styles of young people.

Surprisingly, particularly given the level of concern in regions (Peters and Lloyd, 2003, p20) about their lack of access to training and lack of bandwidth to access online training, there is very little research on the topic of young people and online training in rural and remote areas. More research has been conducted into Indigenous learning and although much of this material relates to learning styles, rather than online learning, some useful insights have been gained.

The emergence of new mobile technologies as a learning medium has been trialed in a number of situations and shows some promise, although the VET system is still grappling with the implications of a 'known' media (web) and the widespread adoption of m-learning approaches is likely to be some way off.

Project Resource

This contains an exhaustive reference list, all of which were referenced in the collation of this report. For a list, please see References.

Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
http://www.flexiblelearning.net.au/resources/	Anne-Marie Kelly	A proposed Framework for the Instigation of Flexible Learning in a Secondary School Context, June 2004	Polyfocal attention in secondary school students, implementation of flexible learning in secondary school settings.	Development of a pedagogy of flexible learning has been overlooked, ie the relationship with the learner. Recognising our own polyfocal ability, that students are more substantially polyfocal, and that teachers need to understand the motivations of students. Nothing directly on e-learning.	Ann-Marie.KELLY@qed.qld.gov.au	
http://www.resources.flexiblelearning.net.au/resources?14@207.OikmaEGVdI9.0@.ee82eae!searchType=simple	Mardi Dwyer	Our Youth, Are they Digitally Enhanced or Not? June 04	Article on the findings of a study into technology use by 14-15 year olds.	Kids under pressure, face-to-face experiential learning is best, need to produce a product, treated like adults-but not ready for self-direction, mobile phones essential to belonging to peer group, difficulty with emotional management, higher IQ for their age.	mdwyer@pilbratafe.wa.edu.au	
http://www.flexiblelearning.net.au/knowledgetree/edition05/download/Rice.pdf	Sharon Rice (Tankard and O'Kelly)	LEARNING PATHWAYS - A Diverse, Equitable and Flexible Indigenous Curriculum, June 04	Case studies about programs that support individual pathways for disengaged youth in Indigenous communities.	Teachers have to show relevance, listen to young Indigenous people to identify issues in their lives and how they affect their learning, have access to strong, wise people who can give them feedback and direction, sense of belonging to a group.	Sharon Rice, Manager of Regional Learning Networks, Swinburne University of Technology, TAFE (03) 9726 1729	
http://www.flexiblelearning.net.au/resources	Holmesglen Institute of TAFE	Dec. 04	Resource: TOOLBOX: (Youth Work Series 3).	Not necessarily 'for' youth - is about youth.		

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http://www.flexiblelearning.net.au/knowledgetree/index.html	Mick Chalmers	e-magine Online Campus: VET in Schools Implementation, Aug. 02	E-zine re on-line VET in schools.	E-magazine is contextualised, project-based professional development for all involved in online delivery including customised, needs based professional development.	mick.chalmers@education.tas.gov.au	
http://www.flexiblelearning.net.au/assessing/casestudies/casestudies040.htm	Frank Bate, Jean McNish	Real and model workplaces, 2003	Combined online assessment with practical assessments in real and model shops and businesses.	The factors that contributed to achieving the right assessment approach included: role-play, having a range of activities and tasks, building in strong visual feedback, integrating online communication with tasks.	Manager Director, E Learn WA, Technology Park, Western Australia	
http://www.flexiblelearning.net.au/leaders/fl_leaders/fl104/papers/digitalland_judithmac.pdf	Phlios Andreou Sphika	The Professional Way of Learning in Digital Land, 2003	Discussion of learning and engagement of digital natives.	It is not feasible to train professionals of today with the tools of the past on how to manage the future. We can't use immigrant language to train natives.	olga@isimco.com	
http://www.flexiblelearning.net.au/leaders/fl_leaders/fl103/final/dwyer_mardi.pdf	Mardi Dwyer	Flexible Learning Leaders 2003 Final Report, 2003		Seven themes in young people's learning: kids are under more pressure, face-to-face and experiential training is best, they need to produce a product, they want to be treated like adults but aren't ready for self-direction, massive need to belong to a peer group, difficulty with emotional management, higher IQ.		

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http://www.flexiblelearning.net.au/research/2002/nr1F03_2.pdf	Sue Kilpatrick, Helen Bound	Learning Online: Benefits and barriers in Regional Australia - Volume 2, 2003	Case studies to support Vol 1.	Mentoring works well when timetabled, large peer group involvement keeps students engaged, used both teacher and institute mentors and both took on different roles (eg school mentors explained terms). Low completion rates attributed to lack of understanding of amount of work involved, lack of appropriate support, early difficulties in get going with the content/ technology (lack of induction), lack of written support material, not having met teachers/peers face-to-face, teachers lack of familiarity with the technology, slow feedback. External enrolment process did not allow teachers to assess numeracy and literacy.	NCVER	
http://www.flexiblelearning.net.au/leaders/fl_leaders/fl102/finalreport/final_robinson.pdf	Sandra Robinson	Flexible Learning Leaders 2002 Final Report, 2002	Rationale for the inclusion of flexible delivery into VET in schools.	Skills students need to operate in the digital age: digital literacy, inventive thinking, effective communication, high productivity. School students prefer mixed delivery rather than pure online, the main problems for students are technological and Internet access, teachers need to develop IT skills and different communication approaches, practical skills are less effectively learned online. Learners need to be prepared to learn online, have different learning styles and need support. Materials need to allow deep learning (reflection, analysis, evaluation and making judgements). Assessment should be valid and fair. Teachers work is different (communication, time management, evaluation).		

E-Learning for Target Learner Groups - Youth

Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
http://www.flexiblelearning.net.au/nw2004/program/wed17.htm		Key online event		Conference program.		
http://www.flexiblelearning.net.au/newsandevents/features/featuresfebruary.htm	Peter LeCornu	Your future, your choice: Flexible learning futures Summary of feedback, 2004	Feedback on discussion paper.	What is common to all generations and all groups is that they want to be able to choose the how, when and where of their learning. Employers are finding that young employees expect that any training they receive will involve technology.		
http://www.flexiblelearning.net.au/leaders/fl_leaders/fl104/papers/reviewessay_aquino.pdf	Mary Aquino	Something to do, not something to learn: Experiential learning via online play, 2004	Review of recent literature on web-based teaching and learning grounded in collaborative and constructivist methodologies.	Integrating technology into teaching and learning in creative engaging ways has become a huge and inescapable challenge facing digital immigrant teachers and educational managers. Web-based role play harness the capacity of technology to enhance communication skills by providing a safe, asynchronous and anonymous environment in which to test out and extend the sorts of sophisticated intra and interpersonal 'soft' skills essential for contemporary working and personal life.		Lots of conferences, researchers, links.
http://www.flexiblelearning.net.au/nw2004/program/wed17.htm	Tom Dawkins	Inspiring youth to engage in multi-media., 2004	Conference segment.	Public debate is removed from young people, young people feel alienated from their communities and have few ways of expressing themselves.		
http://www.flexiblelearning.net.au/projects/txtme.htm	Jill Jamieson	New Practices in Flexible Learning 2004: Txt Me, 2004	Conference segment.	The project recognises that mobile phone use has become a pervasive communication tool among youth culture, and will create recommendations and	Swan TAFE	

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				<p>guidelines for VET providers on using this communication technology to support a sustainable learning culture with disengaged youth. Specifically, the project seeks to find new ways to engage, motivate and sustain lifelong learning skills for these learners.</p>		
<p>http://www.flexiblelearning.net.au/leaders/fl_leaders/leader_profile.php?key=181</p>	<p>Barbara Pitman</p>	<p>The way in which collective cultures teach and learn, 2004</p>	<p>Flexible Learning Leader report.</p>	<p>Indigenous Australians living and working in remote community settings embrace technology with enthusiasm.</p>	<p>Executive Officer, Human Services Training Advisory Council, 08 8981 2550, b.pitman@hstac.com.au</p>	<p>Frankie Forsyth, The Centre for Online Rural Research (CORR)- an initiative of the Wangaratta based North East Telecommunications Co-operative (NETCo-op).</p>
<p>http://www.flexiblelearning.net.au/assessing/casestudies/casestudies010.htm</p>	<p>Cliff Eber</p>	<p>A problem solving approach to make the learning and assessment authentic to the learner, 2003</p>	<p>We looked at each unit in the training package and designed particular tasks for the learner. The tasks involved accessing various components of the Toolbox to get information and sometimes going outside the Toolbox to web-based areas. The learners then submitted the results of research back to the teacher.</p>	<p>Have a strong content expert, good instructional design and a good, fully functional team.</p>	<p>West Coast college, Western Australia</p>	

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http://www.flexiblelearning.net.au/assessing/casestudies/casestudies020.htm	Louise Housden	Retail Toolbox, designed for a younger learner (assessment tasks), 2000	We broke each unit down into the performance criteria, and designed around that structure, each task would cover one or more elements of competence within that performance criteria. The learner had to submit a piece of work basically to cover each performance criteria of the unit as they worked their way through.	We really missed the mark in a lot of ways. People I talk to still use the Toolbox and get great results from it, but the learner group is actually older and more professional than we thought.	Westone	
http://www.flexiblelearning.net.au/newpractices/avecesprit/2-Design_project_overview.doc	FLAG	New Practices in Flexible Learning: Avec esprit Design Project Overview: for Practitioners, 2003	Using applied learning through design projects.	Concept model for each phase of the program.		
http://www.flexiblelearning.net.au/leaders/fl_leaders/leader_profile.php?key=183	Megan Spiers	Interactive Distance Learning satellite technology in Indigenous Communities, 2004	Flexible Learning Leader report.	Learners' behaviours have improved through greater awareness of the range of learning options available to support their learning experience. Our Indigenous students have shown definite interest in using IDL now that they have experienced it firsthand (in the IDL Studio and in the classroom). The relationship between student interest and teacher confidence is critical when implementing new technology.	Northern Territory Open Education Centre, 08 8922 2294, mspiens@ntoec.nt.edu.au	

Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
http://www.flexiblelearning.net.au/newpractices/avecesprit/avec/presentation_networking.pdf	Merv Edmunds	A presentation to the Networking 2003 Conference, October 2003	Strategies for meeting the needs of disenfranchised young people. Traditional pedagogy does not seem to work, and the 'stealth' model seems promising.	One of the guiding principles in stealth learning is the role of the uncertain and the unfamiliar. It is more likely that young people develop new thinking responses when they feel the ground moving underneath the normal routines. Unfamiliar challenges like becoming a 'teacher' and getting paid for it.		
http://www.flexiblelearning.net.au/newpractices/sustainablecommunities/building_sustain_report.pdf	Dorothy Lucardie	Building Sustainable Practice: engaging remote Aboriginal communities Establishment and Implementation Guide, 2003	Implementation strategies for remote Aboriginal Health Development Services.	Music and interactive media generated the highest enthusiasm, participants saw the internet as a necessary and useful communication tool, but limited English literacy restricts the use of web, e-mail and discussion forums.		
http://www.flexiblelearning.net.au/accessequity/downloads/R017L.pdf	FLAG	Women learners in Vocational Education and Training (R017L) Literature Review - Access and Equity in Online Learning, 2003	Literature review with research themes.	Young male learners do not schedule quiet time to study online. Their login pattern is irregular with a shorter time span and scattered frequency.		
http://www.flexiblelearning.net.au/leaders/fl_leaders/fl104/papers/convergemerge_bowes.pdf	Janine Bowes	Converging and Emerging Online Learning Systems - meeting the needs of learners	The range of options for e-learning can seem overwhelming. Making choices that meet the needs of learners means navigating the complex territory of	The lack of communication and collaboration tools in such simple systems is a severe limitation if it is the only system a teacher is exposed to or aware of. However, these systems can provide good scaffolding for teachers who are inexperienced in using online	Principal Education Officer (Discover Online Services), School Education Division, Department of Education,	

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			available software for online learning systems, models for flexible learning, and effective online pedagogies. Whether at system or school level, decision makers need to be well informed in all of these aspects.	systems.	Tasmania, 03 6233 7949, janine.bowes@education.tas.gov.au	
http://www.flexiblelearning.net.au/research/nr0F05_2.pdf	Roslin Brennan	One size doesn't fit all. Pedagogy in the online environment - Volume 2, 2003	Appendices to Vol 1.	Young learners are not independent, motivated and self-supporting. The need for pedagogical teaching is very clear.		
http://www.flexiblelearning.net.au/projects/resources/np_yola_report.pdf	Theo Kavadias	New Practices in Flexible Learning. Just in Time learning assistant project report, 2003	New Practices Project Report.	Young trade learners need their material to be interactive with small amounts of text.		
http://www.flexiblelearning.net.au/aboutus/resources/evaluationreportpartd0604.pdf	I & J Management Services	Evaluation of the Australian Flexible Learning Framework 2000-2004. Part D - Rising to the Challenge, 2004	Addresses the case for further investment in flexible learning.	Most young TAFE students are looking for a campus experience with face-to-face and social interaction. But they expect computers in the classroom, learning and research activities that use technologies, and communication with teachers and peers via e-mail and online chat.		
http://www.learnscope.flexiblelearning.net.au/learnscope/projects.asp?category=34&summaryid=5766&Year=*2004	Margaret Granger	e-Connect: Baiting the Learner	Ways in which they can more readily cater for the disengaged learner - ie the 15-19yo, rural and remote, and indigenous			

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			learners that feel disenchanted with what TAFE (as they see it) has to offer.			
http://www.learnscope.flexiblelearning.net.au/learnscope/projects.asp?category=34&summaryid=5669&Year=*2004%20	Ian Whitehouse	Meeting the VET learning needs of our future e-learning consumers	Better understand the needs of future learners in terms of e-learning by seeking input from learners and from those who support their current learning and then matching this input into a model of good/best practice.			
http://www.lsda.org.uk/files/pdf/1440.pdf	Jill Attewell, Carol Savill-Smith	Learning with Mobile Devices: research and development, 2004	Papers from MLEARN Conference 2003 London.	Mlearning = mobile phones, palmtop computers, computer/video games. Many Japanese websites offer i-mode learning but outside of Japan, the use of mobiles for learning is rare. Re use of games: need to balance young people's desire for excitement with producing effective and ethically sound learning materials. Mobile learning has the capacity to build in collaborative learning, information sharing and group activities.		
http://www.lsda.org.uk/files/lsda/events/mlearn2003/MAhonen_Presentation_MLearn2003.pdf	Mikko Ahonen	Mobility, Accessibility and Learning, Experiences from MOBILEarn project, 2003	PowerPoint presentation of outcomes of project that tested next generation paradigms in a technology-supported mobile learning environment.	A new m-learning architecture will support creation, brokerage, delivery and tracking of learning and information contents, using ambient intelligence, location-dependence, personalisation, multimedia, instant messaging (text, video) and distributed databases.		

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Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
	Frankie Forsyth	ALARPM Action Learning, Action Research and Process Management Conference, unpub. 2004	Collection of tools, tactics, strategies and online stories from ALARPM conference.	Videotape the stories of the older people so it can be preserved. Ensure the handing on of information and knowledge, ideas and techniques so that people growing up in a society need not start from scratch but can have access to the accumulated experience of others (quote Catherine Behrt).	frankie@bigpond.net.au	Pelion Consulting (Tas)
	Frankie Forsyth	ALARPM Action Learning, Action Research and Process Management Conference, unpub. 2004	Collection of tools, tactics, strategies and online stories from ALARPM conference.	Give on-line learners a little information and they devise the rest.	frankie@bigpond.net.au	Pelion Consulting (Tas)
http://www.learning.ericsson.net/mlearning2/resources/bibliography.doc	Ericsson Education Online	Mobile Learning Bibliography, 2003(?)	Bibliography provided by Ericsson Education.	n/a		
http://www.flexiblelearning.net.au/knowledgetree/edition06/download/geddes.doc	Simon Geddes	Mobile Learning in the 21st Century: benefits for learners, 2004	Proposes learning advantages from m-learning, predicts characteristics of future learning environments.	Younger people may be more suited to learning independently than previous research indicated. They are more suited to self-directed, experimental style of learning because they live in a more ill-defined environment. The key is for the teacher to be able to work in the student's Zone of Intervention.	Flexible design project manager, Army Training Technology Centre, 0419 475 547, simon.geddes@defence.gov.au	The Knowledge Tree
http://www.ncver.edu.au/research/proj/nr2f02.pdf	Kristine Peters, Carolyn Lloyd	Differentiating Needs: Customer demand for online learning, 2003	Research project to identify demand elements of online learning for VET	Classroom students valued learning support more highly than online students but all young people in the study said they need additional learning support if	Kristine Peters, 08 8240 0491	NOEL

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			students.	studying online. There is demand for access to theory elements of apprenticeships and traineeships online. Younger VET students were more dissatisfied with their online experience than older students. Students also wanted hard copy texts to support their online studies.		
http://www.ultibase.rmit.edu.au/Articles/dec00/hase2.htm	Stewart Hase, Chris Kenyon	From Andragogy to Heutagogy, 2001	Paper to suggest a move from andragogy to heutagogy in delivery of training to 21C learners.	Pedagogy = the teaching of children, andragogy = self determined learning, heutagogy develops individual capacity through training being learner directed rather than teacher directed.	'0266203166	
http://www.ipm.ucl.ac.be/ChaireIBM/Mayes.pdf	Terry Mayes	Pedagogy, Lifelong Learning and ICT, 2000	Discussion paper that challenges current pedagogies.	'Telling' is not the key to learning, learning is a by-product of understanding which is built by the learner in the performance of tasks and depends on frequent feedback, particularly from teachers and peers. Learning is a progression through stages, and is situated in personal, social and organisational context, which determines motivation.	Tim Mayes, Research Centre for LifeLong Learning, Glasgow Caledonian Universities	
http://www.ncver.edu.au/research/proj/nr9008.pdf	R Brennan, M McFadden, E Law	All that glitters is not gold: online delivery of education and training, 2001	Consolidation study: research into good practice in online delivery.	Online learning is well suited to a constructivist approach, instructional design has become a more pervasive issue, flexible delivery does not necessarily provide a constructivist approach.		

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Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
http://www.onlinelearningmag.com/onlinelearning/reports_analysis/feature_display.jsp?vnu_content_id=1457218	Eve Drinis, Amy Corrigan	Confessions of an e-learner: why the course paradigm is all wrong, 2004	Web zine page.	E-learners want: small meaningful chunks of info, systems that don't create problems when they don't know what they need to know, learning to be relevant to the job, good reference materials, improved job performance as an outcome.		
http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf	Marc Prensky	Digital Natives, Digital Immigrants, 2001	Short article describing the principles of digital native, digital immigrant.	Today's students are no longer the people our education systems were designed to teach.	marc@games2train.com.	
http://www.thejournal.com/magazine/vault/A4677.cfm	Richard Ferdig, Kaye Trammell	Content Delivery in the Blogosphere, 2004	Article in The Journal.	As students appropriate and transform knowledge, they must have authentic opportunities for the publication of knowledge. Blogs are good for this because they allow comment, more advanced than discussion forums because the students have control of the content.		
http://www.ncver.edu.au/research/proj/nr0006.pdf	Clive Chappell, Robyn Johnston	Changing Work: Changing roles for vocational education and training teachers and trainers, 2003	Research into the changes in VET practitioners' work.	Working lives are highly varied, however a teaching role is still significant.		
http://www.flexiblelearning.net.au/projects/indigenouslearners.htm	Debbie Eagles	Indigenous Learners in the Digital Age, 2004	Report on project.	Project just beginning.	University of Ballarat (TAFE division)	

Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
http://www.detya.gov.au/research/docs/final.pdf	Craig McInnis, Robyn Hartley, John Polesel, Richart Teese	Non-completion in Vocational Education and Training and Higher Education, 2000	Literature review commissioned by DEST.	Non completion does not always equate to failure, data sources on non completion are inadequate.		
http://www.dsf.org.au/papers/110/DecliningAppJUL03_0.pdf	Phillip Toner	Declining Apprentice Training Rates: Causes, Consequences and Solutions, 2003	Examines data on declining apprenticeship rates.	Sustained decline in completions that is contributing to a deficit in skilled trades. No systematic factor, but a range of industry and occupationally specific factors inhibiting employer investment in training.		
http://www.ncver.edu.au/research/proj/nr2005.pdf	Erica Smith, Paul Comyn	The development of employability skills in novice workers, 2003	Documentation of the processes by which novice workers develop employability skills at work.	Not relevant to e-learning.		
http://www.ncver.edu.au/pubs/Young_peoplePubsList.pdf	NCVER	NCVER Research Forum: Young people and VET: Options, Impact and Implications, 2004	Reading list.			
http://www.ncver.edu.au/pubs/SACEreviewpaper.pdf	Tom Karmel	Young people in vocational education and training in South Australia, 2004	Paper for SACE review.			
http://www.flexiblelearning.net.au/research/2003/elearning25090	John Eklund, Margaret Kay,	e-learning: emerging issues	View of the state of e-learning, issues and	Continually changing demographic profiles for consumers of e-learning imply		

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3final.pdf	Helen Lynch	and key trends A discussion Paper, 2003	implications for the use of technology mediated and delivered instruction in the VET sector in particular.	<p>the need to adopt a user centred design process for development projects, rather than use an off-the-shelf or templated solution, and underscore the importance of developing processes and skills rather than product.</p> <p>As the IT-literacy of students increases, skills based courses will be replaced with those that focus on information gathering and analysis, and a higher level of base technologies may be assumed.</p>		
	n/a		Discussion via teleconference 29/11/2004.	Bruce's daughter has formed an informal study group with friends where information is exchanged via SMS. Kristine's 7 year old does research for school projects by searching the Internet while on the telephone to her friend who is doing simultaneous research - they compare findings and leads as they work (and have a good chat at the same time).		Asking or observing young people in the way that they communicate and support their studies.
http://www.ncver.edu.au/research/proj/nr1013.pdf	Austin Bond	Learning Music Online: An accessible learning program for isolated students, 2002	Report on project.	<p>For this online development to occur, tutor and student alike must be able to access a learning framework which is effective, simple to use and accessible.</p> <p>Found that increasing the distance between tutor and learner has a negative effect on quality of performance, level of engagement, development and refinement of skills and knowledge. Recommended development of local music networks to provide infrastructure and support.</p>		

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http://www.ncver.edu.au/research/proj/nr1F06_1.pdf	Hugh Guthrie	Online Learning: Research Readings, 2003	Overview to Framework Research programs 2001-2002.	There is currently an unusual, perhaps unprecedented, lack of symmetry between age and expertise which is changing the power relationships in arenas such as the classroom, the workplace and the community. Many people's ICT skills have been acquired piecemeal but it is particularly vital for young people to develop both informational and technological 'fluency' early in life. There are differing expectations of the nature of support by teachers and learners.		
http://www.ncver.edu.au/research/proj/nr0F06.pdf	Robyn Hill et al.	Researching the size and scope of online training in the Vocational Education and Training sector, 2003	Analyses the size and scope of online learning in VET in Australia.	Issues included support services, resourcing, pedagogy, low level of learner engagement in e-learning, size of the online education market is unknown.		
http://www.aboriginaleducation.nsw.edu.au/vet_programs/Teaching_and_Learning_Resources.pdf	aboriginaleducation.nsw.edu.au	Teaching and Learning Resources	Overview of teaching and learning resources for multimedia delivery for Aboriginal young people.	Resource availability.	aboriginaleducation.nsw.edu.au	
http://www.dest.gov.au/schools/publications/2000/ruralhandbook.pdf	Dept Education, Training and Youth Affairs	A handbook of case studies: Models of delivery of vocational education and training in schools in rural and remote areas: Northern	Handbook.	The group of distance education students in Goondiwindi have a classroom, computer and phone access of their own.		

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		Territory, Queensland and Western Australia, 2000				
http://www.acer.edu.au/workshops/documents/confpro2001JC.pdf	ACER	Understanding Youth Pathways: Research Conference 2001 Proceedings	Conference paper.	Online learning as a stand alone learning tool to 2001 is dead in the water. The ability to deliver programs and the necessary support for learners online has not been demonstrated economically, practically or pedagogically. The prerequisites to learn online are generally not there except in rare instances where motivation, lack of alternatives, technological skill and existing networks coalesce.		
http://www.masternewmedia.org/news/2004/10/31/the_personal_rss_newsreader_project.htm	Robin Good	The Personal RSS Newsreader, 2004	Webpage to introduce Really Simple Syndication (RSS) technology advances.	Software to provide aggregation for distribution to students.		
http://www.infoday.com/MMSchools/jan04/richardson.shtml	Will Richardson	Blogging and RSS — The "What's It?" and "How To" of Powerful New Web Tools for Educators, 2004	Article about weblogs for education.	Practical uses for blogs and RSS aggregator/feed.		
http://www.educause.edu/ir/library/pdf/erm0452.pdf	Brian Lamb	Wide open spaces: Wikis, ready or not, 2004	Description of wikis and their uses in education.	Anyone can change anything (multiple authorship), are simplified hypertext markup, quick linking. Users define for themselves how their processes and groups will develop.		http://teaching.wiki.org
http://www.reflections.motime.co	Janine Bowes	Boomers, X-Geners	Summary of Diana	Computers aren't technology, the Internet is better than TV, reality is no		

Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
m/category/1283		and Millennials - understanding the new students, 2004	Oblinger's article of the same name: 10 attributes of the information-age mindset.	longer real, doing is more important than knowing, learning more closely resembles Nintendo than logic, multitasking is a way of life, typing is preferred to handwriting, staying connected is essential, there is zero tolerance for delays, consumer and creator are blurring.		
http://www.eddept.wa.edu.au/vet/downloads/review03.pdf	Dept Education and Training, WA	Review of Vocational Education and Training in Schools, 2003	Government report providing thorough overview of VET in schools 2003.	Mandurah Senior College Online initiative has grown from 9 to 100 students in two years by providing a non-classroom-based, technology-focused learning environment with 21 networked computers available to students. The centre is located at the Centro Mandurah Shopping Centre, and open between 8.30am and 3.00pm. However, unlike traditional schooling, lessons are available at any time of day from any computer connected to the Internet.		
http://www.ncver.edu.au/research/proj/nr1026b.pdf?PHPSESSID=200dba158607a85b341ae1399c6c0d19	Erica Smith, Lou Wilson	Learning and training in school-based new apprenticeships, 2002	Examination of learning and training in school-based apprenticeships.	<5% done online, school and distance education/online did not rate very highly among students as being useful for off-the-job training, those studying online had the weakest links between work and training.		
http://www.dsf.org.au/papers/14/4/RealLearnRealFuture_FEB04_0.pdf	Roger Holdsworth	Real Learning Real Futures, 2004	An update on the learning and work situations of young	In Australia, the interface between education and the labour market is relatively loosely coupled compared to the more tightly-connected interface that		

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			Australians.	<p>characterises some other countries—the pathways are more individually constructed than institutionally structured.</p> <p>A number of state governments—Victoria, Queensland, South Australia, Western Australia and Tasmania—have gone further and launched a range of innovative programs that address school to work transitions.</p>		
http://www.e-learningguru.com/wpapers/blended_bersin.doc	Bersin & Associates	Blended Learning: What works?, 2003	Summary article.	Blended Learning solves the problem of speed, scale, and impact – and leverages e-learning where it's most appropriate, without forcing e-learning into places it does not fit.		
http://www.e-learningguru.com/wpapers/e-Learning_analysis.pdf	Gary Woodill	Where is the learning in E-learning?, 2004	Discussion of the 'missing link' in e-learning.	<p>While many young people of today have a much wider view of the world than their parents, can juggle several cognitive tasks at the same time, are more relativistic and tolerant, and face new situations and change as a challenge, many young people also have a more fragmented sense of time, a reduced attention span, a lack of faith in institutions and explanatory narratives, a reduced sense of place, community and history, and a sharply reduced vision for a personal or collective future (Birkerts, 1994).</p> <p>Five reasons for failure of e-learning: speed to market (still marketing to early</p>	gwoodill@operitel.com.	

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				adopters), focus on technology not instructional design, boredom, lack of understanding of teaching and learning, lack of understanding of the unique teaching advantages of electronic media		
http://www.ncver.edu.au/newsevents/events/papers/trconf13.html	NCVER	Papers from the 13th VET research conference, 2004				
http://www.swtafe.vic.edu.au/staff/induction/development/resource/conferences.asp	SW TAFE, Vic	Forthcoming conferences, 2004				
http://www.ncver.edu.au/files/tr13JeavonsPaterson.pdf	Jeavons and Paterson	Community of Practice, Mobile Phones, Literacy, Numeracy and Young People	PowerPoint presentation.			
http://www.ncver.edu.au/files/tr12Scholten.pdf	Katie Scholten	Online Learning on Location: perspectives from Regional Australia, 2003	Paper from 2003 VET research conference.	Decisions by teachers to engage in online delivery appeared to be related to their motivation, preference and previous experience.		
http://www.globaled.com/events.html		2005 Events, 2004	Forthcoming conferences.			
http://www.conferencealerts.com/elearning.htm		E-learning conferences world wide, 2004	Forthcoming conferences.			
http://www.edna.edu.au/		EdNa 2004	Forthcoming			

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		conferences	conferences.			
http://www.ncver.edu.au/publications/1475.html	Berwyn Clayton, Kaaren Blom, Andrea Bateman, Pam Carden	What works where you are? The implementation of Training Packages in Rural Australia, 2004	Research into the implementation of training packages in rural areas.	<p>Huge diversity of courses needed in rural areas. Most training was directed at supporting primary or local industry and community small business. If learners wished to pursue training programs beyond Certificate IV, they engaged in training online or left their community.</p> <p>Strategies that work: support for learners, particularly those determined as having special needs, both in the workplace and off the job - especially for young trainees and apprentices - and there needed to be a lot of support given to these young people in the first few months of their training.</p>		
http://www.ncver.edu.au/files/tr13Clark.pdf	Terry Clark	What Adult and Community Education does well in Queensland, 2004	Reports on research into lifelong learning.	98% of young Centrelink clients were computer illiterate. E-learning may be good for information gathering but does not help develop higher-level/analytical thinking. E-learning can be socially isolating for auditory and kinaesthetic learners. E-learning may not be needed by micro businesses.		
http://www.ncver.edu.au/publications/1389.html	Kaye Bowman	Equity in Vocational Education and Training: Research Readings, 2004	Research papers covering women, indigenous, disability, NESB, rural, low numeracy and literacy, early school leavers,	The quality of VET career information and advice provided to girls is generally poor. Young males in the skilled trades no longer dominate the apprenticeship and traineeship system. Within three years of leaving school early, between two-thirds and three-quarters of these		

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			older workers.	<p>young people have some contact with VET. An ability to learn at school is a factor which largely determines whether young people without an enterprise to inherit or a workplace to go into, will go or stay in a small or remote community. Those who can 'learn to learn' tend to be educated and encouraged by educated parents and teachers to leave.</p> <p>Only those young people who have least learning or employment options elsewhere tend to stay or return. the likelihood of a successful VET outcome is significantly reduced for people who are Indigenous, have a disability, are of non-English speaking background, are unemployed, or young—particularly if aged 19 years or less. Indeed, for many female clients, online delivery is a deterrent and does not encourage or facilitate their participation. Women appear to prefer interaction with teachers and other students, and appreciate the support and social contact offered by face-to-face delivery.</p>		
http://www.ncver.edu.au	Stephen Billett, Sharon Hayes	Meeting the Demand: the needs of VET clients, 2000	A model for determining the need for and the implementation of VET that seeks to reconcile differences and achieve mutuality of interests.			
http://www.ncver.edu.au/publications/1472.html	Jo Balatti, Lyn Gargano, Martha Goldman, Gary Wood, Julie Woodlock	Improving Indigenous Completion Rates in mainstream TAFE: An action research approach, 2004	Successful management of the increasing numbers of Indigenous people in TAFE.	Training organisations that consider their Indigenous clientele as comprising a number of client groups with different needs and expectations offer better learning opportunities. Indigenous students in mainstream programs who need support are getting less than do		

E-Learning for Target Learner Groups - Youth

Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
				Indigenous students whose TAFE experience is through the Indigenous training units.		
http://www.irrod.org/content/v5.1/mason_rennie.html	Robin Mason, Frank Rennie	Broadband: A solution for rural learning?, 2004	Formal and informal learning that broadband facilitates in rural areas.	It is a prerequisite for the young generation to be connected. Parent concerns about online learning include viruses and questionable websites.		
http://www.electronic-school.com/2001/09/0901f1.html	Kathleen Vail	Online learning grows up, 2001	Web article about online schooling.	Online educators and course developers confuse content and instruction, he argues. "We say, 'read a Web page' instead of a textbook. That's not constructing new knowledge," says Accetta. "We are transmitting information and calling that education."		
http://www.youth2youth.com.au/downloads/Communicating_with_youth.pdf	National Youth Roundtable	Communicating with Youth in Australia, 2004	Description of how to communicate (advertise) with young people.	A planned approach is needed when marketing to young people. Young people only search the net for entertainment and fun stuff - if your site doesn't have real-time 3D online gaming or free music downloads, you're going to need to help young people to find it.		
http://www.aset.org.au/confs/iims/1992/rehn.html	Geoffrey Rehn	An overview of the application within Edith Cowan University of interactive learning	Review of 1991 project.	Best outcomes from interactivity, most findings dated.		

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		technologies in distance education for adult Aboriginal learners in remote and rural Western Australia, 1992				
http://www.polyu.edu.hk/assessment	Steve Frankland	The First International Conference on Enhancing Teaching and Learning through Assessment, 2005	Conference notice.			
http://www.flexiblelearning.net.au/knowledgetree/edition06/html/bra_nt.html	Norene Lahring	Northern Territory Perspectives, 2004	Report on projects.	The NT strategy deliberately avoids making assumptions about how learners will access learning and what, if any, technology they will use to do this. Web tools aren't offered until there is face-to-face support available. Technology skill levels are low for students from remote areas. Use of blogs for students familiar with this technology.		yes, see links
http://www.flexiblelearning.net.au/knowledgetree/edition06/html/int_marcus_ragus.html	Jo Murray	Interview with Marcus Ragus, TAFE Tasmania Horticulture Team, 2004	Interview about m-learning.	Investigating how to make mobile technologies available to remote indigenous people. Training based on skills map, for teachers to be able to adapt Toolboxes.		http://learn.blogspot.com/
http://www.flexiblelearning.net.au/knowledgetree/download/all editionscontents.doc	AFLF	The Knowledge Tree: All Editions Content, 2004	Hyperlinked contents of all editions of The Knowledge Tree.	N/A index only.		yes, see links

Address	Author	Title	Description	Key findings	Contact details	Pointers to networks
http://www.flexiblelearning.net.au/newsandevents/Flexenews/40/Interactive_Ochre_flexenews.htm	AFLF	Interactive Ochre CD Combats Cultural Misunderstanding, 2005	New Practices Project update.	The oral tradition of Aboriginal story telling to deliver messages has enormous potential to model inter-cultural partnerships. The Interactive Ochre CD-ROM models the transfer of cultural knowledge using an educational 'infotainment' concept, putting relationships first, and information second.	Jeff Hunter, Spencer TAFE, 8688 3684	
http://www.theage.com.au/news/In-Training/Laying-Framework-of-life-in-the-ebush/2004/11/22/1100972316089.html?oneclick=true	Eric Wilson	Laying Framework of life in the e-bush, 2004	Newspaper article.	Oral-based training in their own language, delivered in their own environment.	Rhonda Appo	
http://www.acpet.edu.au/events/annual_conference	ACPET	ACPET 2004 National Conference, 2004	Summary of 2004 conference and notice of 2005.		Tulips Conference management on acpet@pco.com.au or 02 4984 2554	
http://www.ella-145-9.gem.wa.gov.au/BP/presenters/	Best Practice Teaching Forum	Passport to Learning, 2004	Links to presenters.			
http://www.converse.com.au/	WAVE	Women Living and Learning: Rhetoric or Reality?, 2005	2005 conference notice.			
http://www.ncver.edu.au/newsevents/trconf/trconf14.html	NCVER	14th VET Research Conference, 2005	2005 conference notice.			
http://www.online-educa.com/en/	Online Education Berlin	11th International Conference on Technology	2005 conference notice.			

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		Supported Learning and Training, 2005				
http://www.opcet.tas.gov.au/tlsafacts/tlsaconference05/Default.htm	Dept of Education Tasmania	Joining the Dots, 2005	2005 conference notice.			
http://www.learningtimes.net/2004octnews.shtml#3	Learning Times	3rd Annual Illinois Online Conference for Teaching and Learning, 2005	2005 conference notice.			
http://www.edna.edu.au/edna/noticeboards?nbpath=688&show=all	EdNA	All events, 2005	2005 conferences and events.			
http://www.users.chariot.net.au/~michaelc/nz/CLESOL/keynote_intro.htm	Michael Coghlan	Finding your voice on the Internet - changing the language, building community and reducing diversity? Sep 04	2004 conference paper.			

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