

# Networking: a driving force for e-learning

## Abstract

In this article the author explores the notion that networking is a driving force for e-learning, through reflection on the development of e-learning networks, established under the 2005 Australian Flexible Learning Framework (the 2005 Framework). She introduces the networks, examines their design, explores why the networks formed, and how connectivism, collaboration and networking strategies were used by network members. She focuses on their stories, reporting on feedback conducted with network facilitators, mentors and members and the perceived learning and benefits that they have experienced. Conclusions are drawn about the nature of networked learning and the role of networks in the convergence of e-learning and e-business. Reflecting on the tools, strategies and performance of the e-learning networks, the author examines the successes of the networks in developing e-learning capabilities of Australian Vocational and Technical Education (VTE) practitioners.

## Introduction

In the first few years of the 21<sup>st</sup> century VTE practitioners began a journey into collaborative communication and networking using emerging technologies. During that time the Australian Flexible Learning Framework provided the initiatives and the imperatives to enhance e-learning and to encourage more practitioners to take up e-learning strategies. In 2005 the importance of opportunities for VTE practitioners to focus on the power of learning and business via networking was realised, and twenty unique networks were established. The majority of these e-learning networks are still functioning in 2006.

This article explores the notion that networking is a force driving educators forward into a new way of planning and sharing their knowledge within and beyond their own domain. Australian educators are learning the importance of networking and making contact with national and international colleagues. Educators are using networking to manage their knowledge creatively, a right of passage into the 'conceptual' age. Pink (2005) describes the future as '...belonging to a very different kind of person with a very different kind of mind – creators and empathisers, pattern recognisers, and meaning makers. These people – artists, inventors, designers, storytellers, caregivers, consolers, big picture thinkers – will now reap society's richest rewards and share its greatest joys' (Pink 2005:1).

Facilitators, leaders and members of educational networks may need to think differently in order to sustain their networks and to advance the e-business of e-learning. If we are indeed in the new 'conceptual' age, then we must prize 'high concept' (Pink 2005), described as '...the capacity to detect patterns and opportunities, to create artistic and emotional beauty, to craft a satisfying narrative, and to combine seeming unrelated ideas into something new' (Pink 2005:2).

This is what the e-learning networks have accomplished in 2005, especially the capacity to combine seeming unrelated ideas into something new. Each facilitator has noted the growth and speed of exchange of ideas within their networks. Their networks, made up of groups of people with shared interests and a passion for learning from others, tapping into the shared knowledge and skills of many, have learned from each other. Networks learn.

So how do the Networks of the 2005 Framework (the e-learning networks) see themselves fitting into the conceptual age? How are they surviving in the convergence of e-business and e-learning?

Take this opportunity to reflect on your own networking experiences and see if any of the learning of the e-learning networks has relevance for you.

## **Who/What are the e-learning networks?**

The Networks of the Australian Flexible Learning Community Project come under the 'umbrella' of the Capability Building program of the 2005 Australian Flexible Learning Framework (2005 Framework). The Project aims to build the capacity of vocational and technical education (VTE) professionals in using flexible learning and e-learning to improve the quality of delivery to clients. The Networks of the 2005 Framework set out to bring like-minded people together in special interest groups, each focussing on a particular aspect of e-learning. A full list is provided in the Useful Links section to follow.

In April, 2005, facilitators of twenty networks established a web presence in the Education Network Australia (EdNA) groups space (in Moodle) and began the task of enhancing the e-learning capabilities of VTE professionals by increasing the uptake and sustainability of quality e-learning and enriching the e-learning opportunities for clients. You will need to become a member (free) of EdNA to access these networks. (See Useful Links for details.) Others chose alternative web spaces and places as their home. A central link to all of them is provided in Useful Links.

Are you a member of any of these networks?

## **What do you need to know about the e-learning networks?**

Keeping things simple, I imagine you'd want to know: what is their focus; where do they live; how do they operate and how can they help your e-learning and e-business?

A few of the networks had already been operating successfully as networks, prior to receiving funding in 2005, while the majority were new networks. However, in each case, their goals were similar and they were focussing on collaboratively enhancing e-learning capabilities and sharing their strategies for doing so.

Most of the networks have a web presence in the EdNA groups, some private and some public. Others are contactable through their facilitators. Some networks are coordinated by one person, while others are facilitated collaboratively by the members themselves. In each case, they operate as free to join associations of like-minded practitioners in the VTE environment.

The major benefits of being a member of a vibrant network include the shared knowledge and the collaboration. If you are seeking professional development in e-learning and wish to be kept informed of new developments in e-learning, then join a network.

Will you be joining one of the e-learning networks?

## Why do people join/form networks?

For many who are at the beginning of the journey into e-learning, the landscape is immense and confusing, and it is often difficult to know where to start. The e-learning networks provide a clear starting point, guidance and mentorship, and enable individuals to find their own pathway to an understanding of specific e-learning strategies. The distinct and shared interests of each of the e-learning networks provide a single approach for newcomers to become immersed into particular aspects of e-learning. For example, if your interests include mobile learning and emerging technologies you will find value in visiting and/or joining the Mobile Learning Network and the Emerging Technologies Network. (See Useful Links for details.)

One thing that networks do well is attract other networks. A number of new groups developed in the EdNA groups website in 2005, for example Casting the Net, a network for those interested in podcasting. This network worked in collaboration with the Online Mentoring Network. Other networks continued to be developed in EdNA during the year and those available in the VTE sector increased to over 170 in the space of six months. Take a moment to explore these by visiting the EdNA groups. (See Useful Links for details.)

Networking is often the best course of action when seeking collaboration on e-learning and/or e-business projects and gathering the collective knowledge of experts in their field. David Day, LearnScope leader from Pilbara, WA provides an excellent current example of networking practices in 'Little Steps through the Online Puddle' his individual LearnScope project website. (LearnScope is the staff development funding program of the 2005 Framework. See Useful Links for details.) David interviewed a number of other e-learning leaders in the VTE environment, to capture their collective expertise. The interviews, with a number of people who have some connection to developing face-to-face practitioners into online practitioners, provide thought provoking insights into the e-business of e-learning.

Do you have a network that you would recommend VTE practitioners join?

## How can networking enhance e-business and e-learning?

Dawson (2003) examines how to succeed in business as you participate in the birth of living networks and how the current surge in connectivity is transforming the flow of information and ideas that underpins the economy. He explores the economic reasoning behind network formation and provides the reader with 10 predictions for the future of business in the networks. The key words in his predictions for our e-learning networks are – connectivity, collaboration and networking.

Dawson explains that '...[c]onnectivity is shrinking the world and in the process, transforming business' (Dawson 2003:1). This connectivity, flow of information and ideas using the new technologies, changes the rules of success. Combine these with trust and collaboration and we find new ways of doing business. Networking practices are not new in the business world; but they have been transformed by the new technologies. It is the speed by which the generation and exchange of ideas happens which most influences the success of business. Leading businesses and educators are driven by this accelerated flow of information and ideas.

In the VTE environment the speed of change is also accelerating as practitioners network widely and embrace new ways of learning and teaching. Those that do not keep up with the changes are quickly left behind while those who work smartly within networks continue to be informed and updated. It is the networking that reshapes our knowledge, our practices and our ideas. Practitioners can no longer afford to exist on the edge of networks; they must immerse themselves in them. An example of why networking was chosen to enhance the e-business of private Registered Training Organisations (RTOs) is evidenced in their aims:

- a successful network, like the Australian Council for Private Education and Training (ACPET) National Online Network for Independent RTOs ensures continuous support and effective communication as its participants explore a range of professional development in e-learning activities. This group aims to facilitate the sharing of experiences, ideas and recommendations of e-learning options and approaches between independent RTOs nationwide.

E-learning networks such as this one have provided a model for sharing continuous development of e-learning resources, e-learning practices and e-learning skills.

Bowles (2004) emphasises the need for agility, adaptability and responsiveness in the conceptual age. He sees networking as a 'force of transformation' (Bowles 2004:119) and networks as '...more flexible and innovative than traditional structural relationships, and more responsive to changing conditions' (Bowles 2004:123).

E-learning networks are stimulators of collaboration and can extend to the convergence of e-business, communities and educators to enable change on a far wider scale.

Can you see how effective a network can be in improving your agility and responsiveness to change?

## How do networks communicate?

Powazek (2002) focuses readers on how to build community features into their websites and provides guidance for coordinators in sustaining their communities, noting that '...[w]eb communities happen when users are given **tools** to use their voice in a public and immediate way, forming intimate relationships over time' (2002:5).

Successful, vibrant and effective networks use a variety of strategies to communicate and create binding relationships and you'll find great examples of such networks in Literacy Live, e-Mployability skills, Digital Storytelling Network (DSN) and the Online Mentoring Network. (See Useful Links for details.)

These networks employed a blended approach of face-to-face, synchronous live and asynchronous, over time events to inform, enthuse and engage with their members. Their live online events attracted a variety of participants from across Australia who held a mutual interest in the topics and issues being explored in these events. *Illuminate Live!* and *iVocalize* events provided opportunities for network members to share their experiences and learning, in supportive and interactive environments. Skype events enabled small group meetings and free voice-over-internet-protocol (VOIP) opportunities for frequent conversations. Each of these networks freely shared resources, strategies, websites and learning opportunities in their Moodle based group environment.

New communication strategies such as blogging, moblogging, podcasting and SMS have been employed to communicate via the Internet and mobile devices such as phones and personal digital assistants (PDAs). Dawson (2003) reminds us that networks are learning to use these systems of 'micro-messaging' to great advantage, resulting in a far greater fluidity of communication. Dawson points out the importance of weblogs as a powerful form of collaborative filtering; he considers them as '...the stream of consciousness of the networks' (Dawson 2003:16)

In 2005 there was a huge focus on the use of voice-enabled technologies to enhance the development of e-learning practices. Some networks specialised in them, while others used such technologies for reflection. View the Emerging Technologies Network testimonial for the benefits of that network, or consider the achievements of the Queensland Indigenous Registered Training Organisation (RTO) Association network, displayed in their digital story. (See Useful Links for details)

The networking of these communication practices among the e-learning networks was a dynamic phenomenon during 2005; encouraging more and more e-learning practitioners to 'get up to speed'!

How does your network communicate?

## **What are the models of learning associated with networks?**

Harrasim *et al* (2001) focus on three major learning outcomes of networks – active learning, collaborative learning and learning communities.

### **Active learning**

Active learning was a key feature of the e-learning networks and this is best illustrated by the stories told by the networks themselves. During the year several opportunities were provided to tell their stories; two online conferences 'Cool Tools', 'Cool Results' and one face-to-face conference 'Cool Connections'. Voice archives of these events are provided at Learning Times Australia (LTA) (See Useful Links for details). You need to join (free) to access the archives. Active learning was a key strategy for the e-Mployability Network, as the facilitator Alison McAllister notes:

The achievements of the network relate to the highlights – increased skills for all participants and particularly for presenters in using online conferencing. This has had good synergy with a LearnScope project I am facilitating this year for managers in that many of them had never seen online conferencing before, let alone participated in a session. I had originally intended for the network to be a means of the new Technical and Further Education South Australia (TAFE SA) Adelaide North, to manage cross campus communication and while this has happened to a certain extent, the input and participation from people in other states has enriched the experience (A. McAllister, 2005, pers. comm., 10 October).

### **Collaborative learning**

In many of the networks, access to experts has been an ongoing feature for their activities. Their expertise was shared in a variety of ways; the most popular by live online synchronous events. These events were well promoted, well attended and well

received. In some cases, due to limited places in the web conference room, there were waiting lists for keen participants.

As facilitator of the Digital Storytelling Network I found the following.

The biggest success for the DSN has been the growing membership and the fantastic sharing of resources and ideas. The DSN is also a home for other satellite groups of digistory enthusiasts. More and more teachers are using the DST methodology to engage their learners with elearning. The newest examples of these are being developed for viewing on PDA (C. McCulloch, 2005, pers. comm., 12 October).

In most networks collaborative learning became the model for their ongoing success. The emphasis was on learning from one another and interacting with other networks. Their learning approaches included: webinars, podcasts, web conferences, mentorship, network resources, informal peer interaction and structured group activities.

### **Learning communities**

The e-learning networks evolved into learning communities as they established their web presence and their model of operation. In the most successful of the e-learning networks you'll find active discussion forums and a busy schedule of events. Some networks opted for regular and frequent communications providing updates via electronic newsletters, email lists and blogs. The Digital Storytelling Network provides a good model with their frequent electronic newsletters.

Building a learning community is a complex task requiring considerable planning, collaboration and reflection. The Online Mentoring Network took this on board in 2005 and has documented their efforts in their network site using a wiki. See Useful Links for details.

Which model of learning do you relate to?

### **What are the essential tools/strategies for successful networks?**

In their feedback and reporting, the facilitators of the e-learning networks all agreed on their use of one or more of these essential tools: web conferencing, social networking, collaborative learning opportunities, mentorship and connectivism, as reasons for their success.

### **Web conferencing**

Several of the e-learning networks used the live synchronous event tool to great advantage during the year; engaging with participants in lively discussions in real voice about their various practices in the use of emerging technologies. A network flourishes from such collaborative learning processes and provides a level of respect and credibility for its presenters amongst their peers.

Two such networks include the eMployability Network and the Emerging Technologies Network. Alison McAllister, facilitator for the e-Mployability Network, chose Elluminate *Live!* for presentations by experts in the field. Madeleine Pitt, facilitator for the Emerging Technologies Network (ETN), opted for monthly meetings

with the network using Elluminate Live and scheduled monthly presentations to enable members to practice live synchronous facilitation skills.

Synchronous communication worked well in Elluminate *Live!*<sup>TM</sup> for the ETN meetings and events. Time for discussion was allowed and as online participants became more at ease with using the technology, active involvement to achieve outcomes increased in both the meetings and events (M.Pitt, 2005, pers. comm., 18 December).

## Social networking

People want to communicate on a regular basis with their networks, but time is often a constraint. Therefore the use of simple social networking tools involving voice was of great benefit. Several of the networks made great use of Skype communications and Elluminate *Live!*<sup>TM</sup> meetings this year. Others made the best use of the asynchronous text based discussion forums. In both cases frequent conversations about their latest experiences were displayed in engaging and convenient ways.

The mentor of ACPET Online facilitator said '...it was a business decision to use Skype for enhancing the mentoring relationships with network facilitators because of its immediacy, ease of use and because it was free' (J. Murray, 2005, pers. comm., 28 December).

The Mobile Learning for Practitioners Network provided a steady stream of text conversations in their discussion forums, bringing more and more interested practitioners into their environment. This conversation continued in various formats even while the facilitator was presenting at the 2005 Mobile Learning conference in South Africa.

Many networks enhanced their collaboration by exploring podcasting and audioblogging strategies. Podcasting certainly proved most popular and in fact, became the word of the year.

The Online Mentoring Network has allowed Sean FitzGerald's work on audio files and podcasts and on the networked learning model to reach a much wider audience and influence a large number of practitioners, to move *from* seeing online learning as a way of [placing] notes onto a learning management system *to* seeing it as an exciting way of creating communities of practice and distributed knowledge sharing (W. Zammitt, 2005, pers. comm., 14 December). (My italics and addition in brackets)

The 2005 Networks Community Forum (home of the e-learning networks) provided engaging experiences with experts in the field using Elluminate Live, moblogging, podcasting and digital storytelling. View the 'Cool Talkback' sessions for an example of the power of podcasting. (See Useful Links for details.) The Networks Manager notes '...the Networks Community has encouraged dynamic and collaborative discourse; stimulated new and diverse thinking and practice; and fostered the sharing of resources'(C. Baxter, 2005, pers. comm., 19 December).

## Collaborative learning opportunities

Other networks employed traditional face-to-face activities to enhance the e-learning capabilities of their network members. These events included tutor led lessons, interactive workshops and mentored individual activities, enabling the participants to actively learn about emerging technologies.

Australian Council for Private Education and Training (ACPET) Online provided a myriad of activities for its members during the year, each one scheduled and promoted at their site.

Collaboration has been a strong focus for those networks that have started from scratch and continues to be part of their ongoing sustainability planning.

The Building and Construction Network has plans to join with another non-funded informal network to continue the sharing and development of e-resources as it is the first stage of the long term aim of the Building & Construction Departments to move towards a more flexible learning model of delivery to students (V. Marsh, 2005, facilitator, pers. comm., 14 December).

The ePortfolio Network is a good example of a network that started at a base level (without an established following) and through collaboration and an on-going program of PD activities, was able to increase membership and produce results. The facilitator notes:

The concept of e-portfolios is only now coming into its own....the PD program was very successful in raising awareness of the concept of an e-portfolio and there has been a definite uptake in the number of Institutes in Victoria interested in taking up workshops for their staff. (J. Rose, 2005, pers. comm., 14 December).

The Networks Manager notes:

The (ePortfolio) Network achieved cross-Framework collaboration in working with LearnScope teams in Victoria, New Practices and the E-learning Creative Communities project. The facilitator also collaborated with e-Works in Victoria who in turn worked closely with the TAFE Virtual Campus (TAFE VC) e-portfolio development team. The network was able to provide feedback about the lack of good practice examples of how e-portfolios are being used in VTE in Australia, and about the difficulty of setting up an e-portfolio on the TAFE VC site. As a direct outcome of this input, e-Works is currently working on developing 4 samples of e-portfolios which teachers and learners will be able to easily customise for their own use – an exciting new development. (C. Baxter, 2005, pers. comm., 19 December) (My addition in brackets.)

## **Mentorship**

Each leader of the e-learning networks was offered a mentor to guide and encourage his/her network coordination. The mentors provided alternative views of the network and enabled a wider engagement with their learning peers. As a mentor for the Emerging Technologies Network, I can vouch for the success of such capability building and recommend the use of mentoring for new and established networks.

The ePortfolio Network utilised mentorship and collaboration to support both the technical and educational aspects of the implementation of e-portfolios in VTE.

My personal recommendation is to establish a network of 'network facilitators and mentors' as an improvement on networking practices in 2006.

## Connectivism

An important emerging pedagogy for the e-learning networks is connectivism. Siemens (2005) describes connectivism, as ‘...a learning theory, seeks to detail how learning happens in complex environments, influenced through new social dynamics, and supported by new technologies’ (2004:para. 23).

Siemens (2004) describes ‘...organizational and personal learning as integrated tasks. Personal knowledge is comprised of a network, which feeds into organizations and institutions, which in turn feed back into the network and continue to provide learning for the individual. Connectivism attempts to provide an understanding of how both learners and organizations learn’ (2004:para.1).

Learning (defined as actionable knowledge) can reside outside of ourselves (within an organization or a database), is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing.(2004:para. 23)

Connectivism is driven by the understanding that decisions are based on rapidly altering foundations. New information is continually being acquired. The ability to draw distinctions between important and unimportant information is vital. The ability to recognise when new information alters the landscape based on decisions made yesterday is also critical (2004:para. 24)

Siemens (2005) poses a series of important questions: ‘What does it mean to educators? How does a networked view of learning impact education? How does it impact how we teach? How does it impact how we design learning (courses, programs, degrees)? How does networked learning influence our expectations of learner performance? What types of skills do learners need to function in complex, chaotic knowledge environments? How do we design ecologies to foster and promote effective learning? (2005:para. 39) See Useful Links for more details.

It seems that Siemens is in agreement with Pink (2005) when he suggests how creators and empathisers, pattern recognisers, and meaning makers may best prepare themselves for the conceptual age. Siemens (2005) provides educators with a few suggestions in his wiki. (See Useful Links for details)

The networking and connectivity provided by the e-learning networks in 2005 has enabled VTE practitioners to define and distribute important e-learning information and to make informed decisions on their e-learning practices based on the new information acquired by the networks. This trend will grow as the focus on networked learning models and the importance of connectivism permeates the VTE environment.

What tools/strategies do you use in your networks?

## Reflections on the impact of the e-learning networks

The manager of the Networks Project noted a number of the 20 funded networks have been very successful as evidenced by a range of factors, including the:

- amount of discussion (dialogue) and professional development (PD) activities generated by the networks
- quality of the dialogue and program of PD opportunities
- numbers involved

- general enthusiastic response that has inspired Australian VTE practitioners
- linkages across institutions, and across State/Territory boundaries
- synergies between networks, including international contacts and links with other Framework initiatives and projects (C. Baxter, 2005, pers. comm., 19 December).

The Networks of the 2005 Australian Flexible Learning Framework have had a huge impact on the knowledge and capability of practitioners all over Australia. Network members are now in a better position for improving their e-business of providing e-learning for their client groups. Networking has enabled a wide range of VTE organisations to integrate the targeting, reporting and evaluation of e-learning with other activities, including knowledge management and performance assessment.

The e-learning networks have highlighted the new and emerging e-learning techniques currently being employed in vocational training and education. They have explored all of the networking strategies available to keep their members engaged and informed. They have used popular online methods to share their learning with a wider audience and have combined these with traditional activities to better prepare their members for best e-learning practices.

I am convinced that Networks 2005 has taken e-learning in Australia to a new level and will have a huge flow-on effect in terms of promoting collaboration and knowledge sharing (W. Zammitt, 2005, pers. comm., 18 December).

They are truly, learning, living networks. How have the e-learning networks influenced you?

## Useful Links

Australian Council of Private Education and Training (ACPET) Online  
You need to be a member of ACPET to access this network  
<http://www.groups.edna.edu.au/course/view.php?id=241>

BusiTrain E-Learning Network  
To join this network email: [elizabeth.hobbs@tafensw.edu.au](mailto:elizabeth.hobbs@tafensw.edu.au)

Casting the Net  
<http://www.groups.edna.edu.au/course/view.php?id=273>  
<http://castingthenetpodcast.blogspot.com/2005/12/casting-net-podcast-16th-of-december.html>

Cool Talkback  
<http://www.groups.edna.edu.au/mod/forum/view.php?id=9306>

Connectivism wiki - George Siemens  
<http://www.connectivism.ca/wiki/CoolConnections> (This page is a supporting wiki for the Cool-Connections presentation provided for the Australian Flexible Learning Framework.)

Derek Powazek's Design for Community

<http://designforcommunity.com>

Digital Storytelling Network (DSN)

<http://www.groups.edna.edu.au/course/view.php?id=107>

and their newsletters at:

<http://www.groups.edna.edu.au/mod/forum/view.php?f=238&showall=1>

Emerging Technologies Network

<http://etnetwork.blogspot.com/>

Click to [view the digital story](#)

e-Mployability skills

<http://www.groups.edna.edu.au/course/view.php?id=204>

Focus on Flexible Learning Network

<http://www.groups.edna.edu.au/course/view.php?id=91>

Learning Times Australia

<http://home.learningtimes.net/lta?go=z1041038>

Literacy Live

<http://www.groups.edna.edu.au/course/view.php?id=221>

Little Steps through the Online Puddle

<http://www.daylight-communications.com/learnscope/index.htm>

Mobile Learning Network

<http://www.groups.edna.edu.au/course/view.php?id=222>

National Plumbing Services and Training Advisory Group (NPSTAG)

<http://npstag.brightcookie.com/>

Network of Building and Construction VTE Practitioners

To join this network email: [vanessam@gippstafe.vic.edu.au](mailto:vanessam@gippstafe.vic.edu.au)

Networks of the 2005 Australian Flexible Learning Framework (2005 Framework)

Community are based in Moodle at Education Network Australia (EdNA) Groups.

You need to become an EdNA Groups member (free) to access these networks

[http://flexiblelearning.net.au/networks/elearning\\_networks.html](http://flexiblelearning.net.au/networks/elearning_networks.html)

Online Mentoring Community

<http://www.groups.edna.edu.au/course/view.php?id=272>

Online Mentoring Network wiki

<http://www.groups.edna.edu.au/mod/wiki/view.php?id=10509>

Queensland Indigenous RTO Association

<http://www.groups.edna.edu.au/course/view.php?id=232>

Click to [view the digital story](#) from the Certificate 11 in Broadcast (Radio) students from Kowanyama

## References

- Bowles, M. 2004, *Relearning to e-learn* – Strategies for electronic learning and knowledge, Melbourne University Press, Carlton, Victoria.
- Dawson, R. 2003, *Living Networks*, Pearson Education, Inc. Publishing as Financial Times Prentice-Hall, Upper Saddle River, New Jersey.
- Harrasim, *et al.* 2001, *Learning Networks*, MIT Press, Cambridge, Massachusetts.
- Pink, D. 2005, *A Whole New Mind*, Allen and Unwin, Crows Nest, New South Wales.
- Powazek, D. 2002, *Design for Community*, New Riders, New Riders, A Division of Pearson Technology Group, Indianapolis, Indiana.
- Siemens, G. 2004 'Connectivism: A learning theory for today's learner, Creative Commons Licence. Retrieved 18 January 2006 from <http://www.connectivism.ca/about>
- Siemens, G. 2004 'Connectivism: A learning theory for the digital age, Creative Commons Licence. Retrieved 18 January 2006 from <http://www.elearnspace.org/Articles/connectivism.htm>
- Siemens, G. 2005, Connectivism: Learning in a Digital Age, supporting wiki for the Cool-Connections presentation. Retrieved 18 January 2006 from <http://www.connectivism.ca/wiki/CoolConnections>