

2008

Twenty-three steps to learning Web 2.0 technologies in an academic library

Julia Gross
Edith Cowan University

Lynette Leslie
Edith Cowan University

Follow this and additional works at: <https://ro.ecu.edu.au/ecuworks>



Part of the [Education Commons](#)

10.1108/02640470810921583

This is an Author's Accepted Manuscript of: Gross, J. & Leslie, L. (2008). Twenty-three steps to learning web 2.0 technologies in an academic library. *The Electronic Library*, 26, 6, 790-802. Available [here](#)

This Journal Article is posted at Research Online.

<https://ro.ecu.edu.au/ecuworks/749>

Title

Twenty-three steps to learning Web 2.0 technologies in an academic library

Authors:

Julia Gross and Lyn Leslie

Edith Cowan University Library, Edith Cowan University, Perth, Australia

Abstract

Purpose

In this paper we report on the adoption and evaluation of a Learning 2.0 program in a pilot program at the Edith Cowan University Library during 2007.

Design/methodology/approach

We examine the suitability of Learning 2.0 for training eight 'early adopters' among our library staff in the new and emerging Web 2.0 technologies. The program was set up and deployed via a blog, which recorded staff progress through the nine-week implementation phase of the program. At the conclusion, a focus group was held and the pilot group members responded to questions about the relevance of the program, and the effectiveness of their learning.

Findings

In the study we found that library staff responded positively to this program, not least because it adhered to adult learning principles. For our purpose, Learning 2.0 was an eminently suitable training package.

Originality/value

The paper is unique in that Edith Cowan University Library was the first Australian university library to adopt Learning 2.0.

Article Type: Case study

Keyword(s): Communication technologies; Continuing professional development; University libraries; Australia

Introduction

In April 2007, Edith Cowan University Library (ECU) embarked on a project to train its staff in the area of Web 2.0 technologies. Senior staff was fully aware of the potential of Web 2.0, and we had already made some progress with providing a Web 2.0 service in the form of podcasts of library tours and tutorials. However, many members of staff did not know about the new technologies, so it was obvious that some form of training was needed.

As senior librarians and project leaders, we began this project with the presumption that Web 2.0 technologies are the 'next big thing' in academic libraries because they offer social networking capabilities in providing information and services to the library's

clientele. So our first step was to investigate the available training options. We decided the Learning 2.0 program had potential, but felt the need to adapt it to give it local authenticity. There is more on the adaptation below.

As both coordinators and participants in this study, an ethnographic case study approach seemed logical and appropriate. It enabled us to describe how our pilot group of eight 'early adopters' worked through the Learning 2.0 program and assessed its suitability for an academic library. We used the social networking capabilities of the Web 2.0 technologies to engage with our pilot study group in the blog and wiki learning environments, and group members used the blog posts to record their progress through the nine-week implementation phase of the program. At the end of the nine-week program a focus group was held and the pilot group members responded to questions about the relevance of the program, and the effectiveness of their learning.

What follows is an account of 'what happened' when a small group of academic librarians tackled Web 2.0 technologies with the '23 things' entailed in the Learning 2.0 program. We start with background information about Web 2.0 and Learning 2.0, move to describe how the latter was modified and applied in the ECU Library setting. Finally we reflect on the effectiveness of Learning 2.0 aided by some theorising about adult learning principles and some feedback via the participants' focus group.

Defining Web 2.0

The phrase 'Web 2.0' was coined by Tim O'Reilly in 2004 to describe the design patterns and business models for the next generation of Web software following the technology market crash in 2001 (O'Reilly 2005). This implied economic definition does not however, embrace the perceptions related to the technologies and user behaviour.

For some, Web 2.0 is seen as a natural extension of the creator of the World Wide Web, Sir Tim Burners-Lee's vision for a global collaborative information space. For many others, Web 2.0 refers to a group of technologies such as: blog, wikis, podcasts, RSS feeds etc, where everyone is able to add and edit the content, creating a socially networked Web environment. (Anderson 2007)

The classic example of a Web 2.0 technology is the online encyclopedia, Wikipedia, as it emphasises collaboration and social networking, where users interact and create content. Some of the other technologies that exemplify the change to Web 2.0 are:

- **Blog** (web log) - a website in which entries are written in chronological order and commonly displayed in reverse chronological order
- **Wiki** - a type of computer software that allows users to easily create, edit and link web pages
- **RSS (Really Simple Syndication)** - a family of Web feed formats used to publish frequently updated content; RSS makes it possible for people to keep up with their favorite websites in an automated manner
- **Podcast** - a digital media file, or a related collection of such files, which is distributed over the Internet using syndication feeds for playback on portable media players and personal computers

ECU library had been using the Web as a platform to provide staff and students with more flexible access to resources through its WebPac, online databases, journals and books and communicating via email. Getting library staff using the new emerging technologies was seen as a way to enhance services further by offering new mediums to connect with students and staff.

Web 2.0 and libraries

One of our first tasks as project leaders was to gauge how Web 2.0 technologies were being used in libraries throughout the Western world. There is a lot of literature on the topic and we soon became convinced that the introduction of Web 2.0 and social media was going to transform the way we did business. Dubbed Web 2.0, the next generation Web promises to make the Web a way of life and turn software development upside down. The Web moves from simply being sites and search engines to being a shared network space that drives work, research, education, entertainment and social activities-essentially everything people do. (Storey 2006)

What is now called Web 1.0 had an incredible impact on library services. It seems likely that Web 2.0 technologies are going to have even greater impact:

Web 2.0 will have substantial implications for libraries and recognises that while these implications keep very close to the history and mission of libraries, they still necessitate a new paradigm for librarianship. Web 2.0 technologies... might create changes in how libraries provide access to their collections and provide user support to their clients (Maness 2006).

Net generation

When discussing the impact of Web 2.0 technologies on academic library services, it is important to consider the profile of our new and future users, who are being referred to as 'the net generation', 'millennials' or 'digital natives'. Here is a description of the net generation's relationship with technology from one of its own:

I am a member of the Net Generation. The Internet and related technologies have had a major influence on my generation's culture and development. Many, if not most, Net Generation students have never known a world without computers, the World Wide Web, highly interactive video games, and cellular phones. For a significant number, instant messaging has surpassed the telephone and electronic mail as the primary form of communication. It is not unusual for Net Geners to multitask using all three communication methods at once, while still surfing the Web and watching television (Roberts 2005)

Recommendations on how libraries should provide services for this generation typically emphasise using technology, much of which can be labelled as Web 2.0. For example, Lippincott (2005) advises libraries to "consider updating some of their methods for teaching students, incorporating gaming technology, or developing more visually oriented instruction aids, for example."

Gardner & Eng (2005) drew on survey data from a 2003 undergraduate library user survey to attribute four key traits to the Net generation:

- demand for quality academic facilities and high academic achievement
- need for customization of technology and research
- need for integration of technology into learning
- usage of new communication modes.

Library 2.0

The Web 2.0 technologies pose many challenges for libraries. Debate about how these technologies may change libraries has been taking place in a number of forums. The term 'Library 2.0', which is now in common library usage, was first used by Michael Casey (2005) as a tagline in his blog, Library Crunch. However as Miller(2006) points out in his Talis white paper, "Library 2.0: the challenge of disruptive innovation", the term itself has been the subject of some debate.

What is not under question is the technology driven trends which are pushing services out to library customers.

Fundamental to the changes we anticipate for libraries is a shift from the delivery of a library service just within the library building, or simply from a library's own web site. Consequently, as well as continuing to offer services to those who come to us, we need to reach beyond the boundaries of the library space, and begin pushing services out to people in the places where they are already interacting. For example, new technologies and new attitudes make it eminently feasible to break the OPAC down into a set of functional components...available for inclusion in almost *any* page on the web...(Miller 2006)

Anderson reflects some of ECU Library's thoughts about the new technologies allowing us to serve our staff and students in better ways.

Proponents argue that new technologies will allow libraries to serve their users in better ways, emphasise user participation and creativity, and allow them to reach out to new audiences and to make more efficient use of existing resources. Perhaps the library can also become a place for the production of knowledge, allowing users to produce as well as consume? Others worry that the label is a diversion from the age-old task of librarianship (Anderson 2007).

Getting library staff using the new emerging technologies was seen as a way to provide the experiences necessary to be able to participate in some of the more complex discussions surrounding Web 2.0 and libraries and to break down some of the barriers to accepting change. The themes surrounding the wisdom of the crowd and new technologies being used for social networking were of particular interest.

Web 2.0 posed changes that were unavoidable as they began to pervade the key library technologies used everyday in library work. Vendors were designing library systems that embraced Web 2.0 concepts. Students are able to rank items in the library catalogue, e-

reserve lists are accessible from Black Board, the course management system and RSS feeds can be set up from library databases. Week three of the project required the group to set up their own RSS feed from the ERIC database.

Librarians were also beginning to take up the Web 2.0 challenge as a way to develop professionally through creating blogs to discuss issues as they arose; some notable examples are:

- Shifted Librarian (Levine 2004)
- LibrarianInBlack.net: resources and discussions for the "tech-librarians-by-default" among us (Houghton-Jan 2007)
- TechEssence.Info: the essence for library decision-makers (Tennant et al. 2005)

Some widely known Australian library blogs are:

- Librarians Matter (Greenhill 2006)
- Hey Jude: fortunate discoveries about Web 2.0 (O'Connell 2006)

Many libraries are finding that the Web 2.0 social technologies can provide opportunities for staff development and user engagement. As project leaders charged with the role to tackle the Web 2.0 challenge at ECU, we took all of this supporting literature into account, as we planned a strategy for our library. The following is an account of ECU Library's first step on the journey to acquire library 2.0 status

About Edith Cowan University Library

The ECU library offers a full service at each of its four campuses, supported by a central acquisition and cataloguing section. Each library is being developed as the community hub of its campus, to offer print and online collections, student study areas, wireless networking, student lounges, face-to-face assistance, e-labs, a bookshop and a coffee shop. The new award winning Joondalup Campus library, which opened this year, reflects this ideal and now other existing library buildings are being refurbished along the same lines. Our physical library spaces are now 21st century, but there is work to be done in building a 21st century online community learning space.

Online services are an important focus, with a large collection of library databases, electronic journals and electronic books, an 'Ask the Library' E-Reference service, and in 2006 we began to develop podcasts to cater to the needs of our techno-savvy students. Thus, we were well positioned to embrace Web 2.0 technologies in our library services. However, as of early 2007, ECU Library was still peripheral to the social Web 2.0.

In library strategic planning discussions in January 2007, the exploration of Web 2.0 technologies was identified by library management as a high priority, and the need for training in the new technologies was a fait accompli.

Rationale for Learning 2.0

Given the library's decision to explore Web 2.0 technologies, it followed that we needed to develop the knowledge base of our library staff. We needed informed staff who could participate in library planning. Furthermore, we needed library staff who could support library clients' use of the Web 2.0 technologies in their learning and teaching. The

library's WebPac and databases were beginning to incorporate some of the Web 2.0 applications. We did not want library staff to be unaware of both the debate and the technology developments stirring the winds of change.

But what was the best Web 2.0 staff development program to train ECU library staff? At a multi-campus university, bringing library staff together for the face-to-face training was a logistical challenge, so a flexible, web based program in Web 2.0 technologies seemed the best prospect. At the time we were considering our options, Learning 2.0 came to our attention in an article about Yarra Plenty Regional Library in Victoria, Australia, the first public library to take up and endorse this program in Australia (Mackenzie 2006).

From this article we learned that Learning 2.0 was developed in August 2006 by Helene Blowers, Public Services Technology Director at the Public Library of Charlotte and Mecklenburg County (PLCMC) in North Carolina. Blowers had offered successful face-to-face training in new technologies, but with 400 plus staff spread around public library locations across the whole county, she needed to devise an efficient means to deliver training in new and emerging technologies.

Blowers was inspired by an article by Stephen Abrams, Vice President of Innovation at SirsiDynix, in which he outlined 43 things you might do to learn about new technologies (Abram 2006). The 43 things were goals for learners to engage in self-discovery learning using the free web tools available. Abrams' 43 things were transformed by Blowers into 23 things and Learning 2.0. The Learning 2.0 program has been licensed under Creative Commons, so that the content is freely available for others to use. The content of the original 23 exercises can be found on the PLCMC Learning 2.0 Blog (Public Library of Charlotte & Mecklenburg County 2006). Learning 2.0 seemed to suit our requirements at ECU because the development work had already been done; it was a bonus that Helene Blowers was encouraging and willing to respond to our list of queries.

We decided it would be strategic to first run a pilot of the program, so in April 2007 we called for volunteers and had no problem attracting six enthusiastic staff members. The pilot group members came from all sections of the library. Some worked directly with clients in our Library Services section, and others came from the Library Collections and Access section. A key aim of the pilot was to test the IT demands of the program, and see whether it would result in increased calls to our already busy IT Help Desk. The pilot group of eight staff would also test the program's viability in an academic environment and assist in evaluating the learning outcomes and content of the program.

Learning 2.0 at Edith Cowan University Library

At the outset we assumed Learning 2.0 could be deployed to staff in one of these ways:

- by a setting up a website
- through a wiki
- through a blog

Most libraries had used a central blog to deliver their Learning 2.0 content, and we decided to do the same. We used much of the content as is, but added in some of our own local exercises to give the program an academic library focus. For example, we

included material on the virtual world of Second Life and an exercise that took staff into a wiki in Blackboard, ECU's course management system. We also added an exercise requiring staff to access a video broadcast on the university's new Flexilecture courseware delivery site.

A central ECU Library Learning 2.0 Blog was set up using the free Blogger site (Edith Cowan University Library 2007). The advantages of using a public blog site such as Blogger are that it provides a number of blog templates, and no HTML skills are required in setting it up.

In the pilot at ECU the 23 learning activities were presented over nine weeks. For a complete list of the 23 learning activities see Appendix 1.

Each week a new blog was added, detailing the exercise requirements for the week. The exercises include blogging, RSS, social tagging, wikis, podcasting, video and images using hosting sites such as YouTube and Flickr. In week two our staff in the pilot group set up their own blogs, which were linked to the main program blog.

Each week's exercises included readings, examples of the technology in use, an opportunity to use or create the technology, and reflection on the technology. Participants completed the weekly activities and posted their progress on their own blog. Our pilot group members were encouraged to comment on one another's blog entries to enhance social interaction, which helped bring the group together online. We discouraged the use of email and asked the group to use the blog comment option so that we could explore the blog as an organisational communication tool. Staff reflections on their blogs became a motivating factor and a source of camaraderie and shared language and experience among the pilot group. We discovered hidden skills in some staff and the group. For example, some staff turned out to be quite techno-savvy and they assisted others in the group.

The most important thing I learned was using www.google.com/ig as a start page (or home page). I discovered this in our first week; it's the most useful tool I've come across. Apart from the Google search engine, I've embedded a whole heap of widgets and feeds into the page. I know what the weather is, my gmail inbox is easily accessed, what the latest news stories are and I've got all our blogs listed for easy reference. Webwiz (Edith Cowan University 2007)

Early on a decision was made to not provide rewards for staff to complete the program. All pilot group members had volunteered to join the team and were intrinsically motivated to complete the program. However, to encourage the pilot group along the way we organised some face-to-face discussions in the form of an introductory seminar, a half-way morning tea, and a final celebration with certificates of completion. As project directors, we provided leadership to the group and overall support, but we also worked side-by-side with the other participants to complete the exercises. Senior library management was strongly behind the Web 2.0 endeavours, which was an essential factor in the program's success at ECU.

Evaluating the learning in Learning 2.0

The program designed by Blowers is not a typical training program. It uses a discovery approach to learning. In doing the '23 Things' exercises the participants are able to discover the features of the Web 2.0 technologies. In addition, the exercises combined with the participants' own experience often led to the discovery of unexpected uses for the technologies.

To our knowledge, no formal evaluation of Learning 2.0 has been conducted. However, the take-up rate among libraries worldwide has been impressive and stands as an endorsement of the program. The accolades from enthusiastic library staff who have undertaken Learning 2.0, mainly in the U.S., can be found on the biblioblogosphere (Public Library of Charlotte & Mecklenburg County 2006).

Adult learning principles

During the nine-week pilot implementation period at ECU, we evaluated Learning 2.0 first and foremost from the perspective of how it immersed learners in the Web 2.0 technologies; but we found it instructive to consider whether the program adhered to adult learning principles. In developing his concept of andragogy, Knowles (Knowles 1984) characterised adult learners as self-directed, with life experience, a readiness to learn in ways that are aligned with social roles, an orientation to learn that is problem based, and with intrinsic motivation for their learning. We judged the Learning 2.0 program to uphold these principles. For one thing it provides flexibility and enables the learners to determine their own learning goals; for another, the program sets the learners concrete tasks and encourages them to work collaboratively with others.

I did this weeks exercise, commenting on our wiki on Blackboard. I hit the edit link to see if it would let me make changes to the article and it did! Something to be careful of, letting everyone loose on something you've written. Webwiz (Edith Cowan University 2007)

I got a bit lost with Mashups, but at least I understand now how they work. I tried Explore and then I also had a look at tags and how you can search the tags in Flickr. The bigger the tag the more images there are, for example WEDDINGS is extremely popular. I clicked on Spain and found some great photos there. Jay Gee (Edith Cowan University 2007)

Learners can be autonomous because not all tasks are compulsory and learners can work at their own pace. Furthermore, learners may engage more deeply with technologies that relate to their own experience, so that, for example, a proficient photographer may see immediate application with Flickr, while another may take an overview approach. Staff can take the learning at a surface level or can engage more deeply with the suggested activities. And the learning provided in Learning 2.0 is authentic because it relates to real library situations.

I think Technorati is a fantastic site for libraries to use. It makes searching for subjects a lot easier and its amazing that it can bring up information in all sorts of formats, whether it is in blogs, audio or video format. As soon as I used technorati, I figured how a random person commented on my post about Second Life, as I had that tagged. How amazing another person also doing Web 2.0 managed to find it! Webwiz (Edith Cowan University 2007)

Investigate and develop a session for academics and maybe higher degree students on RSS as an extension/adjunct to the alerting services available within our subscription databases. Nap (Edith Cowan University 2007)

The Learning 2.0 program also supports multiple learning styles and includes a range of media. Weekly exercises may include a podcast, a video, and examples of the technology in use. Readings from the literature are included. The program provides opportunities to use or create mashups (combinations of content from more than one source) with the new technologies.

As mentioned above, Learning 2.0 at ECU was set up and deployed via a blog. Once members of the pilot group had set them up, their own blog posts were used to record their progress through the nine week implementation phase of the program. Each participant's blog became a reflective journal in which she/he would comment on new discoveries, record any learning problems, and pose questions to the whole group. Pilot group members were encouraged to comment on one another's blogs.

Letting the client contribute to subject headings is the ultimate way of catering to how they think and helping them find items more easily. It puts a lot of trust into clients who you would hope do the right thing by not vandalising library wikis, or in the case of adding subject headings, spelling them correctly! Webwiz (Edith Cowan University 2007)

We can create our own environment in Second Life. I don't really know where this is all headed, but it certainly stretches the imagination! Jay Gee (Edith Cowan University 2007)

Focus group review

At the conclusion of Learning 2.0 at ECU, we held a focus group, and the pilot group members responded to questions about the content, design and relevance of the program and the effectiveness of the learning. The questions we posed to the focus group were:

- Did the ECU Library Learning 2.0 program achieve its proposed aim of developing staff understanding of Web 2.0?
- How would you now be able to contribute to planning an effective library presence in Web 2.0?
- How would students use these technologies as part of the library's online environment?

- Would you recommend the Learning 2.0 program to other staff?

The responses from the pilot group to these questions were positive and all felt their horizons had been expanded by the program's activities. Staff reported that they now have first-hand experience at blogging and they have delved into such things as Second Life, Flickr and YouTube. They have become more aware of what is happening out in the wider library world and how people are engaging with social networking technologies. They have started to consider the implications for libraries and the possibilities for how libraries can harness the youth client penchant for social networking. All members of the pilot group were in the 30 to 50 year old age range and they now feel they have a better understanding of the new ways the net generation are engaging with the library and the university. The pilot group endorsed this program for an academic library and recommended it be offered to other library staff.

I guess I am a lot less daunted by the interaction with strangers that Web 2.0 presents as a community. It is actually quite exciting getting comments from people about the work being done on our blogs. I have also learnt how easy so much of it is to get great looking results without too much work behind the scenes for us Bloggers. There are so many places out there to find people with something in common that you can interact with. Klickety (Edith Cowan University 2007)

As a library we have always embraced the idea of engaging with our students, however, these technologies take us out of our safety zone and expose us to a greater degree of engagement than we have previously experienced. ELLE (Edith Cowan University 2007)

I have picked up some useful skills and have connected all the dots so understand how this all fits together. By the time you get to the end of this program you realise how important the tagging is as it enables you to really connect with others. Having a My Space to gather all your feeds is a great idea and helps you to organise the information flow. Jay Gee (Edith Cowan University 2007)

It has been important to see how other libraries are using Library 2.0 technologies and I now have the tools to keep up a bit at least! KAT CHAT(Edith Cowan University 2007)

Through their behaviour during the nine-week implementation, pilot group members demonstrated how learning is enhanced when ideas are shared, challenged and discussed in a social context. The interactivity generated by the wikis and blogs supported group learning, but not always in the ways intended. Focus group members commented that during the program they found that the blog exercises were "instructive"; however, some stated that they "learned more afterwards when talking with others in the group", and they "learned from others by reading their blogs and getting ideas of what to do and how to take things further".

Learning 2.0 is geared to finding solutions to problems. Learners complete tasks, share their knowledge, reflect on their learning, and share this reflection as part of the tasks.

But the nine-week course at ECU was set at a fast pace. ECU pilot group members stated that with more time during the program they would have been able to reflect more deeply on their learning. Our experience has been that since we completed the program, pilot group members are still recognising the importance and wider significance of the new technologies for libraries. In retrospect we would allow a longer training period than nine weeks.

Integration of Web 2.0 into the workplace

The Australian Flexible Learning Framework's study on new technologies in the Vocational Education & Training (VET) sector in Australia provides some guiding principles that are relevant to the ECU Library's intent to integrate the Web 2.0 into the workplace:

The intersections between the practice and theory of using social software are evident for both the knowledge sharing and VET delivery. ... If practitioners become immersed in the use of social software in the way that they do their work, the transition to VET will occur seamlessly (Evans 2006).

ECU is seeking to emulate this transition from the work-based learning of Learning 2.0 to the application of the technologies in everyday work. Library staff stated in the ECU pilot focus group that they found that Learning 2.0 "fed into work proper ... as the learning does not stop with the program". Staff can now see many Web 2.0 applications within the library. For example, already the new technologies of RSS and social tagging are available in an upgrade of the Library's Web OPAC where we can provide RSS feeds of new library products. We can also tag relevant catalogue records. In many journal databases and a vast number of external news and other websites RSS feeds are provided. Staff became immersed in these new technologies while they were working through Learning 2.0, and their integration into work proper is now happening.

As for using it for libraries, I like the idea of being able to add reviews to items in the library catalogue. I think the students could get a lot of that, I always enjoy reading the comments on Amazon before we purchase. It helps decide if it is worth the effort and cost or not. So I am sure the same could be done with the catalogue. It will be interesting to see if other libraries take it up or not. I would not like to be the first one to do it! It would be very hard to let go of control of the catalogue as well, it is so regimented. Klickety (Edith Cowan University 2007)

I like the idea of a "good ideas" wiki it could be useful for information literacy ideas sharing. A place to go and seek comment so we don't have to wait for a workshop. ELLE (Edith Cowan University 2007)

ECU Library staff appreciated the opportunity to learn new technologies and they were grateful for being "given permission to explore and have fun". The Library is now adopting some of these interactive technologies to engage students. Foremost in our thinking is their potential for our online clients and those we never see in person.

This theme of providing online Web 2.0 services underpins the following ECU Library initiatives:

- A staff library blog is being used in our current Web OPAC Review process
- A library blog is being developed as a communication tool for our clients
- A wiki is being used to discuss hot issues in the library
- We are experimenting with Del.icio.us to share bookmarks among teams
- Our range of podcasts is being expanded
- We are using Camtasia to deliver some information literacy to students
- We are promoting RSS feeds as database alerts to our users

Another beneficial outcome for ECU Library is that doing the program has raised the profile of the Library. We are now seen within the university as technology leaders and the university's professional development section is looking at a similar program for academic staff.

Conclusion

Edith Cowan University Library successfully ran a pilot of the Learning 2.0 program in 2007. Learning 2.0 had been evaluated and found to be an adaptable program that would address the identified need to raise staff awareness of Web 2.0 technologies. The program is supported by current learning theory and adheres to adult learning principles. As a result of the training program at this academic library in Western Australia, Web 2.0 technologies are now being synthesised and integrated into work proper and are providing new opportunities to connect with our users. The staff is also better placed to provide input to future technological change. In phase two of this project Learning 2.0 has been offered to all library staff and more than 30 staff are currently undertaking the program. The authors will report on phase two of Learning 2.0 at ECU in a future article.

Reference List

- Abram, S 2006, '43 things I might want to do this year', in *Information Outlook*, 5th March 2007.
- Anderson, P 2007, *What is Web 2.0? Ideas, technologies and implications for education*, JISC, London. Retrieved 5th March, from <http://www.jisc.ac.uk/publications/browse/types/reports.aspx>
- Casey, ME 2005, *Library Crunch: Service for the next generation library: a library 2.0 perspective* Retrieved 24th September, from <http://www.librarycrunch.com/>
- Edith Cowan University 2007, *ECU Library Learning 2.0: Participants*. Retrieved 5th March, from <http://eculearning2participants.blogspot.com/>
- Edith Cowan University Library 2007, *ECU Library Learning 2.0*. Retrieved 18 March, from <http://eculibrarylearning.blogspot.com/>

- Evans, V 2006, *Networks, connections and community learning with social software*, Australian Flexible Learning Framework. Retrieved 26th April, from <http://flexiblelearning.net.au>
- Gardner, S & Eng, S 2005, 'What students want: Generation Y and the changing function of the academic library', *Portal: Libraries and the Academy*, vol. 5, no. 3, pp. 405-20.
- Greenhill, K 2006, *Librarians Matter: it is and we do. Musing, enthusing, libraries, emerging technologies, balancing, being mum*, Fremantle. Retrieved 25th October, from <http://librariansmatter.com/blog/>
- Houghton-Jan, S 2007, *LibrarianInBlack.net: resources and discussions for the "tech-librarians-by-default" among us...* Retrieved 23rd October, from <http://librarianinblack.typepad.com/>
- Knowles, MS 1984, *Andragogy in action*, Jossey-Bass, San Francisco.
- Levine, J 2004, *Shifted Librarian* Retrieved 24th October, from <http://www.theshiftedlibrarian.com/>
- Lippincott, J 2005, 'Net Generation Students and Libraries', in DG Oblinger & JL Oblinger (eds), *Educating the Net Generation*, EDUCAUSE, Boulder, Colo. , pp. 1-15.
- Mackenzie, C 2006, 'Skilling staff for Library 2.0', *Incite: News Magazine of the Australian Library and Information Association*, vol. 27, no. December, p. 7. Feature.
- Maness, JM 2006, 'Library 2.0 theory: Web 2.0 and its implications for libraries', in *Webology*, vol. 3, p. Article 25.
- Miller, P 2006, *Library 2.0: The challenge of disruptive innovation*, Talis, Birmingham. Retrieved 4th March, from <http://www.talis.com/tdn/node/1304>
- O'Connell, J 2006, *Hey Jude: fortunate discoveries about Web 2.0* Retrieved 24th October, from <http://heyjude.wordpress.com/>
- O'Reilly, T 2005, *What Is Web 2.0: design patterns and business models for the next generation of software*. Retrieved 19th October, from <http://www.oreilly.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>
- Public Library of Charlotte & Mecklenburg County 2006, *Learning 2.0 program blog*. Retrieved 18 March, from <http://plcmclearning.blogspot.com/>
- Roberts, GR 2005, 'Technology and Learning Expectations of the Net Generation', in DG Oblinger & JL Oblinger (eds), *Educating the Net Generation*, EDUCAUSE, Boulder, Colo., pp. 1-7.

Storey, T 2006, 'Web 2.0: Where will the next generation Web take libraries?' *Next Space: The OCLC Newsletter*, no. 2, pp. 6-11.

Tennant, R, Salo, D, Kroski, E, Lease-Morgan, E, Riley, J, Bowen-Ayre, L, Breeding, M, Farkas, M & Dowling, T 2005, *TechEssence.Info: the essence for library decision-makers* Retrieved 26th October, from <http://techessence.info/>

Appendix 1 ECU List of 23 Things

ECU List of 23 Things	Link: eculibrary-23things.blogspot.com/
#1. Read about Web2.0 and Learning 2.0	http://eculibrarylearning.blogspot.com/2007/03/week-one-about-learning-20.html
#2. Set up a Google Gmail account in Blogger	http://eculibrarylearning.blogspot.com/2007/03/week-two-blogs.html
#3. Set up your blog on Blogger and add a post	http://eculibrarylearning.blogspot.com/2007/03/week-two-blogs.html
#4. Register your blog on the Library intranet	http://eculibrarylearning.blogspot.com/2007/03/week-two-blogs.html
#5. Learn about RSS feeds and setup your own Bloglines newsreader account.	http://eculibrarylearning.blogspot.com/2007/03/week-three-rss-feeds.html
#6. Locate some library RSS feeds	http://eculibrarylearning.blogspot.com/2007/03/week-three-rss-feeds.html
#7. Set up an RSS feed from one of the library journal databases, (or a library ejournal) into your Bloglines newsreader	http://eculibrarylearning.blogspot.com/2007/07/week-four-rss-feeds.html
#10 Take some digital photos and post them on your blog. Borrow a digital camera from MMR if you don't have your own.	http://eculibrarylearning.blogspot.com/2007/03/week-five-photos-and-images.html
#11. Explore Flickr and learn about this popular image hosting site	http://eculibrarylearning.blogspot.com/2007/03/week-five-photos-and-images.html
#12. Have some Flickr fun and discover some Flickr mashups and 3rd party sites, and create some mashups	http://eculibrarylearning.blogspot.com/2007/03/week-five-photos-and-images.html
#13 Second Life. Watch the library DVD of "You Only Live Twice", the ABC Four Corners program on Second Life and virtual worlds.	http://eculibrarylearning.blogspot.com/2007/03/week-six-play-week-virtual-worlds.html

#14 Check out the ABC Four Corners website for some of the supporting materials	http://eculibrarylearning.blogspot.com/2007/03/week-six-play-week-virtual-worlds.html
#15 Post to your blog on how, or if, you think Second Life may impact on libraries	http://eculibrarylearning.blogspot.com/2007/03/week-six-play-week-virtual-worlds.html
#16 Learn about tagging and discover Del.icio.us (a social bookmarking site)	http://eculibrarylearning.blogspot.com/2007/03/week-seven-social-tagging.html
#17 Explore Technorati and learn how tags work with blog posts	http://eculibrarylearning.blogspot.com/2007/10/week-ten-social-tagging-part-2.html
#18 Read a few articles from our Endnote Library on Web 2.0 and the future of libraries and blog your thoughts	http://eculibrarylearning.blogspot.com/2007/10/week-ten-social-tagging-part-2.html
#19 Discover YouTube and a few sites that allow users to upload and share videos. Week 12	http://eculibrarylearning.blogspot.com/2007/03/week-eight-podcasting-videos-and.html
#20 Listen to some podcasts on the Podcasting @ ECU site and post what you have learned on your blog	http://eculibrarylearning.blogspot.com/2007/07/week-twelve-podcasting-videos-and.html
#21 Discover some good podcasts from Australian libraries	http://eculibrarylearning.blogspot.com/2007/07/week-twelve-podcasting-videos-and.html
#22 Explore any site from the Web 2.0 Awards list, play with it, and blog about it	http://eculibrarylearning.blogspot.com/2007/03/week-nine-grand-finale.html
#23 Post your thoughts about the Learning 2.0 program on your blog	http://eculibrarylearning.blogspot.com/2007/03/week-nine-grand-finale.html

About the authors

Julia Gross is the Faculty Librarian and Library Account Manager for the Faculty of Education and Arts at Edith Cowan University Library, Edith Cowan University, Perth, Western Australia. In her current position she leads a team of staff with a focus on client service delivery to support faculty teaching, learning and research. Julia has a particular interest in staff development and in online information literacy using Web 2.0 technologies. Julia holds a Bachelor of Arts, a Postgraduate Diploma in Librarianship, and a Graduate Diploma in Management and a Graduate Certificate in Tertiary Teaching. Julia Gross is the corresponding author and can be contacted at: j.gross@ecu.edu.au

Lyn Leslie is the Faculty Librarian and Library Account Manager for the Faculty of Computing, Health and Science at Edith Cowan University Library, Edith Cowan University in Perth, Western Australia. In her current position she leads a team of staff with a focus on client service delivery to support faculty teaching, learning and research. Lyn has a particular interest in online environments as learning places; in incorporating Web 2.0 technologies into information literacy delivery and in the ongoing development of library staff. Lyn has a Bachelor of Applied Science and a Graduate Certificate in Tertiary Teaching.