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Informed Cyberlearning: A case study

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Introduction

Throughout, this book highlights the potential of Web 2.0 to enhance information use and learning for personal, social and professional well-being. This Cyberlearning case study demonstrates the application of Web 2.0 in mainstream higher education curriculum, whilst providing an in-practice example of informed learning, the pedagogical construct introduced in Chapter 6. The case study features the learning experiences and creative outcomes of postgraduate Cyberlearning students at Queensland University of Technology in 2011[1]. As informed learners, the students learned simultaneously about the theory and practice of Cyberlearning by carrying out a virtual team project. This involved collaboratively researching a topical issue, as well as exploring and applying Web 2.0 media. To support the informed learning of their peers, they created online resources which both convey disciplinary knowledge and showcase the educational potential of Web 2.0.

Queensland University of Technology (QUT) is based in Brisbane, Australia. It prides itself on being *A university for the real world* with a commitment to "Provide high-quality, learning-centred environments that capitalise on both physical and virtual innovations" (QUT, 2011, p. 4). While many of QUT's programs are offered on-campus, an increasing number are offered in blended or completely online modes. To varying degrees, learning is mediated via online technologies, both in 'formal' educational spaces such as QUT's Blackboard learning management system and subscription databases, and in the 'informal' domains of Web 2.0. The Cyberlearning unit of study is fully online and enables students to explore, apply and evaluate multiple options for learning and teaching. Students are encouraged to constantly flow between formal and informal online environments. In this way they gain nuanced understandings about informed learning for Web 2.0 and beyond.

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[1] The featured online resources and reflective comments arose from the students' normal coursework, and were not intentionally produced or adapted for this case study. They are reproduced with the students' permission.

Overview of CLN601 Cyberlearning

CLN601 Cyberlearning is a fully online unit of study in QUT's Master of Education (Teacher-Librarianship) degree programme. Each year the unit attracts 60-70 students, who are spread around Australia and a few abroad. While it is a core unit in the Teacher-Librarianship study area, CLN601 is also a popular elective across the general Master of Education and Master of TESOL programmes and it attracts some students from Master of Information Technology (Library and Information Science). Most students are practising primary or high school teachers, some are from the vocational or higher education sectors, a few are workplace educators, librarians or IT professionals. So the student group is varied, in terms of educational and professional backgrounds. Students also come to this unit with varying degrees of expertise and confidence in using online technologies. Most are comfortable using popular Web 2.0 tools, while a few have well developed IT skills. For each individual, whether an online novice or a relative expert, this unit aims to offer an opportunity to extend their online horizons, on the basis that the rapidly changing online environment ensures that there's always something new to explore.

In the context of this unit of study, *cyberlearning* implies learning in online environments mediated by online technologies. The unit allows students, as informed learners, to experience Cyberlearning and the online environment in many different ways. It offers students a variety of online learning activities and resources via the QUT network and the wider Internet. The unit's Blackboard (virtual learning environment) site represents the students' homebase or virtual campus, which offers selected study materials, communication with students and teachers, and collaborative tools and spaces. It is also a jump-off point to the wider online universe of Web 2.0 media. They can experience both the relative safety and reliability of Blackboard, and the chaos and serendipity of Web 2.0. In addition, the students gain varying perspectives of Cyberlearning, as members of an online learning community, as members of smaller virtual teams, and as independent learners.

For the first three weeks of semester, learning activities take place within Blackboard, in order to build a cohesive community of cyberlearners and allow students to become familiar with learning in an online environment. For many, this is first semester after a long break from study and some have limited knowledge of online tools and terminology, and experience various anxieties. So, using standard Blackboard tools, the students are encouraged to connect with each other, via online tutorials, introductory blogs and a discussion forum, thus developing familiarity and confidence with online tools and techniques in a 'safe' environment. For example, to break the ice and initiate thinking about

Cyberlearning, students are invited to share via a class blog: 'a song title, book title or movie title that describes how you think/feel about cyberlearning and/or the online world; and tell us why you chose that title'.

In 2011 their responses evoked a range feelings, which included: 'Brave new world', 'One step at a time', 'Avatar' 'Labyrinth', 'Inception', 'Asylum', 'The climb' and 'I will survive'. One student commented:

> I feel a little like Dr Who, except with a 'virtual' TARDIS. I expect to be exploring brand new (cyber) worlds, and (virtual) realities, but without a single specific destination. I'm looking forward to the journey and the excitement, and to the people I meet on the way.
>
> (Bernadette Power, 2011, *Who's Who* blog).

Whole class web-based tutorials via Elluminate (synchronous meeting software, continue throughout the semester, in order to maintain the sense of community. However, from Week 4 the students begin to work in small virtual teams and the context shifts from Blackboard to Web 2.0, as they co-create online learning resources using Web 2.0 media (as described in the following section). During the final weeks of semester (10-13) the students work independently as cyberlearning critics and designers, as they evaluate other team's' resources and then apply their learning about Cyberlearning theory, resources and practices to designing a Cyberlearning experience that addresses a particular learning need (formal or informal).

Experiencing informed learning in the Cyberlearning unit

The Cyberlearning unit incorporates informed learning principles (Bruce, 2008; see also Chapter 6 of this book). Web 2.0 offers the environment and tools for engaging with information to learn. The students are learning about Cyberlearning as a subject with a particular body of theory and practice relating to the pedagogy and curriculum of online learning. Simultaneously, they are developing an array of information using practices that will not only be applicable to this unit or degree programme, but may also enhance their personal, academic and professional learning outcomes. As informed learners, the students are encouraged to engage in continuous reflection (Bruce, 2008; Hughes, 2008; Moon, 2004) on their information use and learning, with a focus on critical incidents they experience during the unit.

The virtual team project at the heart of the unit enables students to experience informed cyberlearning in varying ways as researchers, designers, resource creators and critics.

Table 13.1 relates different informed learning experiences to particular aspects of the
project, further elaborating the idea of informed learning for Web 2.0 that was presented in
Chapter 6.

Experiences of informed learning	Experiences of informed learners in the virtual teams project ~ *collaboratively …*
1. Information awareness	Scanning, exploring and sharing different online information sources *~ planning the online learning resource and selecting a suitable Web 2.0 platform for an online learning resource*
2. Sources	Sourcing information of all kinds (including text, graphics, audio and video) in Web 2.0 and other online environments whilst *~selecting and researching a topical cyberlearning issue*
3. Process	Engaging with Web 2.0 and other digital media to learn through *~ locating, evaluating, selecting information about the topic of the online learning resource;* also through *exploring and evaluating the content and appropriate presentation of other teams' online resources*
4. Control	Organising information in Web 2.0 and other online environments when *~ sharing, recording and saving information and materials for the online resource;* also when *documenting virtual team decisions and monitoring progress*
5. Knowledge Construction	Developing personal understandings of knowledge domains, via Web 2.0 and digital environments, through critical and creative thinking when *~ using selected information to develop content and format of online learning resource;* also when *engaging with other teams' online resources*
6. Knowledge Extension	Creating and communicating new knowledge in Web 2.0 and online environments, innovating and creating new insights and new solutions to problems as outcomes of learning activities and assessment by *~ creating and publishing an online learning resource that contains informative original content and supports interactive learning;* also when *interacting with other teams' resources to learn, providing feedback via an evaluative survey*
7. Wisdom	Using information wisely and ethically in Web 2.0 and other online environments, applying knowledge developed to further social and educational well-being by *~ modelling ethical use of information and providing a quality online resource that enhances colleagues' learning and teaching;* also by *evaluating own contribution to virtual team and reflecting on virtual team experience with a view to enhancing own future learning and practice*

Table 1: Experiences of informed cyberlearners in the virtual team project

E-moderating the virtual team

In terms of the projects' learning objectives, the process of virtual teamwork is as important
as the end product. The students are required to participate actively in all aspects of forming
and managing their virtual team. In particular they all take a turn as team leader or e-
moderator.

Salmon's (2011) model of e-moderation guides the practical implementation of both the
whole unit and the virtual team project. This 5 step model supports a learning process where

students gradually and explicitly: develop familiarity and confidence in the online learning environment; establish their online identities and then interact with other students in the CLN601 cyberlearning community; exchange information and experiences online; develop common understandings and engage in collaborative online activities; explore further potential of the online environment and tools, by integrating them into further learning and teaching contexts and reflecting on their informed learning goals, processes, outcomes and future possibilities. Salmon's model places emphasis on the role of the e-moderator as an educator-guide who supports the development of an online learning environment that fosters interaction, exploration and collaboration among learners.

 The Cyberlearning virtual team project

The virtual team project is the focus of learning and assessment in the Cyberlearning unit through Weeks 3-10 of semester. It aims to give students first-hand experience of online collaboration as well as the opportunity to explore and create online learning resources. In virtual teams, students are required to plan, research, develop and present an online learning resource on a current cyberlearning topic for adult learner-educators. Thus, students use Web 2.0 media in multiple ways which include forming and organising their teams, communicating and monitoring progress, researching topics, sharing information, publishing new knowledge, fostering informed learning and teaching.
The project has an authentic purpose and audience: the students are operating as cyberlearners and cybereducators when developing an online resource that they could later use or adapt in their professional teaching context. As one 2011 student commented:

> Our resource could be an opportunity for teachers to grab ideas that others have tried and have worked, in essence, to collaborate virtually – so that we no longer have to work in a bubble. I'm thinking of bringing our resource into my school, sharing and inviting teachers to contribute as they discover a practical application of technology in their classrooms.
>
> (Antonietta Neighbour, Reflection, 2011)

The students are advised that in terms of learning and assessment outcomes, the process of virtual teamwork and resource development is as important as the product itself. In addition, the emphasis is on effective application of Web 2.0 media to support learning, rather than on a display of technical wizardry. For reasons of equity, students must use freely available Web 2.0 tools, which avoids the need for expensive software (e.g. Dreamweaver), specialist skills (e.g. web design) or access to particular servers. While advanced IT skills are not required, students are encouraged to share any expertise they have with team members.

Each team member takes a turn as team e-moderator (Salmon, 2011) for one week, in order to give each team member experience of leading a virtual team, as well as fairly spreading the workload and responsibility between everyone. Students generally report positive e-moderation experiences, for example:

> It was what happened when each different team member took on their role as e-moderator that affected me. It was like each member got a boost of confidence as they took their turn. The members who had been a bit quieter at the start, once they had e- moderated, seemed to find their voice.   The reason behind everyone taking turns at e-moderating became so much clearer to me than just being a way of sharing the role. I could see it was a wonderful way of ensuring all teams members not only got to feel what it is like to take on the role of the e-moderator but that it also ensures that each team's members voice is heard. In this way, it has the potential to create confidence in others.
>
> (Michelle Ferguson, Reflection, 2011)

Since students often express reservations or anxieties about teamwork, especially in the online environment, as educator I take particular care with the team formation process. In Week 3 students carry out a variety of web-based quizzes to self-assess their teamwork strengths, ICT capabilities and learning preferences (for example: Birmingham City Council, 2011; London Metropolitan University, n.d.; Solomon & Felder, n.d). Then, in an online survey they: summarise these results, as well as previous evaluations such as Myers-Briggs Personality Type Indicator; possibly volunteer to be their team's first e-moderator (leader); and indicate any people they would prefer to work with (or not). Aiming to create productive team conditions, I take all this information into consideration when allocating people to teams. As far as possible, I spread people with differing preferences, strengths and limitations between the teams, in particular allocating at least one person with average or advanced ICT capabilities to each team. While team sizes vary, experience of several years shows the optimum to be 5 members: any more, and online communication and organisation seems to become unwieldy, any less and it is difficult to sufficiently develop the resource in the allocated time. Also, starting with five team members allows for re-scoping of the project if one or two people withdraw from a team. To initiate the team process, I nominate the first week's e-moderator, who where possible is a volunteer. This approach to team formation is by no means a perfect science and some teams gel better than others. However, in general this attention to creating congenial team conditions is generally beneficial, as one 2011[j1] student comments:

> Together, we had a balance of interests and teamwork skills. As such, overcoming differences in location and teaching contexts was not an issue. … Overall, it was the qualities

of patience, trust and generosity that defined our team experience. Furthermore, the positivity that pulled us out of any doubt and defused potentially stressful technological issues allowed us to arrive at a position of pride in our work. I have learnt that the skills needed to create an online resource are pointless if the skills in working with other people have not been developed. Harmonious collaboration will not only improve the quality of the resource, it will improve one's understanding of how people will use the resource.

(Greg Howes, *Reflection*, 2011)

Once the virtual teams have been allocated, members have six weeks to organise themselves, research a topic, create an online resource, and make it available to the whole CLN601 community by the due date. Each team is required to determine their topic and which online tools and resources to use, the only provisos being that their online resource should focus on a current cyberlearning issue; address an intended audience of adult cyberlearners (fellow students and professional colleagues); and be interactive and demonstrate the potential of online learning.

The teams have access to considerable support materials on the unit's Blackboard site, including suggested weekly timelines and guidelines for e-moderators. They are expected to be self-managing, but can consult me as team advisor whenever necessary. Collaboratively, the virtual team members need to determine appropriate means to communicate and manage the project using online media of their choice. Most use a combination of standard Blackboard tools, including Elluminate web-based conferencing, and Web 2.0 media such as email, Skype, a blog or wiki, or Facebook.

The online resources have to be ready for all CLN601 students to access by Sunday afternoon of Week 9. In Week 10 students independently explore other teams' online resources. This enables them to further extend their knowledge of Cyberlearning theory and practices. Then, as cyberlearning critics they evaluate two other online resources, by completing an online survey that asks them to provide 3 commendations and 3 recommendations to the creating teams. (Once the projects have been marked, I make the students' feedback available to the respective teams).

Assessment of the virtual team project has two main elements:
   (a) Whole team assessment: quality and originality of the online resource, with regard to application of cyberlearning principles, content, interface, and suitability to learner needs and context

(b) Individual assessment: evaluation of 2 online resources; self-assessment with evidence of own contribution to virtual teamwork; reflection on virtual team experience, based around 2-3 critical incidents (positive or negative), discussing the insights they have gained about virtual team processes and outcomes, and how they might apply these insights to enhance their virtual teamwork in future learning or professional contexts.

Samples of online learning resources by 2011 Cyberlearning teams

The vitality of the unit stems from students' willingness to share and experiment with online learning approaches. Collaboratively they create online resources that both reflect their own learning about a topical issue and support the learning of their peers. The most effective online resources present information in an engaging and well researched manner, stimulate the exchange of ideas and enable self-assessment. Over the last few years the virtual teams' resources have included blogs, wikis, Nings, Voicethread, Glogster, Joomla, Prezi, and Animoto, often with built in quizzes polls, links to videos and games, newsletters, FAQs and discussion forums. In 2011 there were 13 teams and the following four online resources present a representative sample of the quality and variety of their work, with regard to subject coverage and application of Web 2.0 media.

Mobilised by Team A

Mobilised is an engaging, professional-looking online resource, created using Weebly web-site building software. It enables educators to explore the use of mobile devices for teaching and learning in the primary (P - 7) classroom. The unifying theme 'get, set, go' captures the spirit of mobile learning. The resource both informs about the topic, and showcases the potential of a very wide range of cyberlearning resources and practices, to help teachers make informed decisions. It encourages shared learning through blog, online noteboard and suggested resources.

URL: http://mobilised.weebly.com/

Promotional video: http://fabfive11.glogster.com/glog-4853/

> **_Educator's lounge_ by Team D**
>
> _Educators' Lounge_ is an innovative and practical one-stop information aggregator for busy educators. The resource offers quality content in a variety of forms (texts, web links, images, videos) and handy desk-top tools (calendar, clock). A range of interactive elements enable communication (though forums, RSS and the opportunity to construct a PLN). As an additional bonus, the embedded _Educators Armchair_ blog encourages informal interactions and information sharing.
>
> URL: http://protopage.com/educatorslounge (close the advertisement on first visit)

> **_Techinfoliteracy_ by Team G**
>
> _Techinfoliteracy_ uses the wikispaces format effectively to both support learning about information literacy and to demonstrate the potential of wikis (and a range of other Web 2.0 resources) to support innovative pedagogy. The interface is visually appealing and user-friendly. It includes a variety of formats (text, graphics, videos) and enables interactive learning through a variety of polls, quizzes, discussion forum etc. Notably, it was created by a team of 3, challenged by the withdrawal of 2 members.
>
> URL: http://techinfoliteracy.wikispaces.com/Home

> **_The 21st Century Library_ by Team N**
>
> An informative resource that presents the role of the school library, in particular with regard to promoting reading in online environments. It makes good use of Yola website building software to describe and evaluate well chosen web 2.0 resources. It encourages a high level of interactivity. The resource is cohesively structured and user-friendly, with appealing humorous touches.
>
> URL: http://the21stcenturylibrary.yolasite.com

Reviewing the experiences of informed cyberlearners in the virtual teams project

As outlined above, the virtual team project enables students to simultaneously learn about cyberlearning as a subject, in terms of information environments, concepts and practices, whilst learning how to use cyberlearning resources and tools, to support their learning and teaching. In the course of the project the students gain richly productive experience of all seven faces of informed learning (Bruce, 2008). While this Cyberlearning case study relates to a postgraduate unit of study within Education, the framework shown above in Table 13.1 could be applied to differing higher education contexts. As mentioned in Chapter 6, informed

learning builds on collaborative partnerships between information professionals and academic teachers.

So where is the role of librarians in informed cyberlearning? Potentially everywhere! Drawing on individual strengths, they might contribute as educators, informed learning role models and disciplinary experts. They might collaborate with academic teachers in the development and implementation of curricula that incorporate informed learning principles; and they might act as advisors to virtual teams about project management software, the critical and creative uses of online information and about collaborative processes. Librarians are ideally positioned to identify and signal connections between emerging technologies and learning opportunities, by modelling innovative uses of Web 2.0 in their interactions with students and educators. For example, they might profile the use of web 2.0 tools for organising a cross-disciplinary research project or collaboratively preparing a conference paper. The library website might feature virtual teams' outstanding resources to support others' informed cyberlearning.

Conclusion

The dynamic Web 2.0 environment enables learners to experience informed learning in differing ways. It provides ideal conditions for innovative learning approaches that foster exploration, evaluation, creation, communication and reflection. The relative simplicity of Web 2.0 tools allows learners to focus on learning processes and information practices rather than technical problems and skills. This comment of a 2011 student encapsulates the transformative potential of informed cyberlearning:

> Overall, my understanding of cyberlearning at this point is that it is dynamic, ever changing, far-reaching, both global and individualised and something I want to be a part of. It is something that will always have further to go, and have more to learn. It can be the ultimate challenge for life-long learning as it will continue and expand well after my lifetime. Cyberlearning is a journey that will require me to follow those learning pathways that will perpetuate in a cycle from discovery and engagement to sharing with others in a truly collaborative way! It makes me feel overwhelmed, excited, daunted, in awe, unbelieving at times, frustrated, very small, confident... and that is just at the beginning of this journey. I look forward to continuing to feel these emotions, as it becomes second nature to rely on cyberlearning as a principal mode of learning!
>
> (Jenny Saggers, Reflection, 2011)

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