Going live: Building academic capacity in blended learning using web-conferencing technologies

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This paper reports on a current initiative at Queensland University of Technology to provide timely, flexible and sustainable training and support to academic staff in blended learning and associated techno-pedagogies via a web-conferencing classroom and collaboration tool, Elluminate *Live!*. This technology was first introduced to QUT in 2008 as part of the university's ongoing commitment to meeting the learning needs of diverse student cohorts. The centralised Learning Design team, in collaboration with the university's department of eLearning Services, was given the task of providing training and support to academic staff in the effective use of the technology for teaching and learning, as part of the team's ongoing brief to support and enhance the provision of blended learning throughout the university. The resulting program, "Learning Design Live" (LDL) is informed by Rogers' theory of innovation and diffusion (2003) and structured according to Wilson's framework for faculty development (2007). This paper discusses the program's design and structure, considers the program's impact on academic capacity in blended learning within the institution, and reflects on future directions for the program and emerging insights into blended learning and participant engagement for both staff and students.

Keywords: blended learning, web-conferencing, academic capacity building, learning design

Program Overview

The QUT "Learning Design Live" (LDL) program aims to facilitate the strategic institutional goal of improving student learning outcomes by building academic capacity in teaching and learning. QUT's strategic plan explicitly recognises the diverse learning needs of its students, many of whom do not attend - or are not able to

attend - formal classes, and states that the university "will seek to provide welcoming, challenging and collaborative environments and experiences in the classroom and beyond" (Queensland University of Technology 2011, p. 4). Moreover, part of QUT's "vision for the future" is specifically "to provide outstanding learning environments and programs that lead to excellent outcomes for graduates, enabling them to work in and guide a diverse and complex world characterised by increasing change" (p. 10).

One of the ways QUT seeks to meet these strategic goals is by employing and fostering blended learning in a range of forms, which are informed by the institution's blended learning policy and associated policies on approaches to learning and teaching and high quality teaching (*QUT Manual of Policies and Procedures* [*MOPP*], 2010). Blended learning may be understood as the combination of face-to-face teaching and learning with online teaching and learning "whereby both face-to-face and online learning are made better by the presence of each other" (Garrison & Vaughan, 2008, p.52). Sharpe (2006) argues that institutions implementing blended learning require "highly contextualised and specific rationales for their adoption of technology" for the implementation to be successful (p. 3). QUT defines blended learning in its own institutional context as "the designed integration of face to face, distance, and electronic approaches to enhance student learning" (*QUT MOPP* 2010, s6.3), which, when taken together with its definition of student learning needs, corresponds to the rationales of "flexibility of provision, supporting diversity, enhancing the campus experience [and] operating in a global environment" as outlined by Sharpe (2006, p. 2).

Building Academic Capacity

The implementation of blended learning and the associated use of educational technologies have the potential to increase access to education and flexibility of teaching, to enhance communication and collaboration, and to create rich learning environments (Miller, Martineau & Clark 2000; Birch & Sankey 2008; Lonn & Teasley 2009). However, building institutional academic capacity in these techno-pedagogies is an essential part of the implementation process, and a range of factors have the potential to influence the success of such capacity-building activities. Many of these factors relate to Rogers' (2003) perceived attributes of innovations: relative advantage, compatibility, complexity, trialability and observability. The research suggests that effective diffusion of innovation in the field of e-learning requires a synchronised fostering of innovation from a top-down policy and leadership perspective together with bottom-up innovation and change (Wilson 2007; Davis & Eales 2007; Cook, Holley & Andrew 2007; Stein, Shephard & Harris 2009). Researchers concur that good communication strategies for awareness-raising and dissemination are vital to the diffusion process (Rogers 2003; Davis & Eales 2007, Zellweger Moser 2007). Arguably, however, this communication should be discursive in form, rather than didactic, and should encourage input by stakeholders at every level and in every part of the process (Davis & Eales 2007; Stein et al. 2009).

One critical requirement for building academic capacity in blended learning is the provision of adequate support for staff, both technical and pedagogical (DeLone & McLean 2003; Zellweger Moser 2007). Ellis and Goodyear argue that "It is rare for an individual academic to have all the knowledge and experience needed to make the best choices among learning tasks, technologies and ways of organising students, and to make sure that these choices are aligned to the best effect" and advocate team collaborations of academics together with educational development and technology specialists to "embrace more complex approaches to educational design, and make use of appropriate design tools and methods" (2010, p. 118), and these are potential benefits which may accrue as a result of the program.

Web-conferencing is a key emerging blended learning tool with its own set of techno-pedagogies, as facilitated through a range of technologies such as Skype, Cisco WebEx, Adobe Connect, and Blackboard Collaborate (Elluminate *Live!* plus Wimba). QUT supports the Elluminate *Live!* tool for use in teaching and learning, which facilitates a range of learning activities with differing levels of synchronicity and interactivity according to Bower, Hedberg & Kuswara's framework of online pedagogies (2010, p. 182). These activities include synchronous and asynchronous lectures, interactive tutorials, face-to-face lectures streamed to external students

and containing interactivities such as polling and back-channel chat, remote and interactive guest lectures, document collaboration, virtual meetings and audio-visual assessment feedback. Bower (2011) argues that while the use of web-conferencing systems in teaching and learning may potentially enhance active learning especially in distance learning contexts, the implementation of these tools is a complex process requiring technical mastery and the ability to solve problems in real time, consideration of the pedagogical affordances of the tools separately and in combination, and the careful design of the learning experience to use the most appropriate tools and modes to achieve the desired outcomes (pp. 63-4).

Program Design

The research on innovation, capacity-building and blended learning strategies have closely informed the design of QUT's Learning Design Live program, which is designed to build academic capacity across the university in the techno-pedagogical competencies associated with teaching and learning in technology-enhanced learning environments. In terms of Graham's four levels of blended learning and teaching granularity (2006), the program is informed (and has the potential to inform reflexively) the institutional-level of blended learning, but focuses mainly on building academic capacity in activity-level and subject-level blended learning, while also explicitly considering the implications and possibilities of implementing course-level blending.

The LDL program aims to achieve the following objectives:

1. Raising awareness of the Elluminate *Live!* tool and its pedagogical affordances for blended learning within the university, especially among academic staff.
2. Providing an ongoing program of professional development activities related to blended learning using the Elluminate *Live!* technology which are timely, reusable and targeted, and which staff can access synchronously and asynchronously.
3. Modelling good practice pedagogical exemplars of Elluminate *Live!* usage.
4. Communicating information about associated university support structures, such as resource banks, learning design assistance, Elluminate *Live!* training, IT Help Desk support and audio-visual support.
5. Using the Elluminate *Live!* platform to showcase academic experts, faculty projects and university initiatives related to blended learning.

The program was developed according to Rogers' theory of innovation (2003) and specifically in terms of Wilson's framework for faculty development (2007). The first dimension of this framework is communicating the relative advantage of the innovation specifically for teaching and learning, with Wilson suggesting showcasing and information sessions as possible strategies. This approach is fundamental to LDL as stated in the program's objectives, and is further enhanced by cross-promotion of the program at other university communities of practice, showcasing and information events.

The second dimension outlined by Wilson is demonstrating the compatibility of the innovation with current learning and teaching practices and faculty values. Wilson suggests that "It is useful to start with individual faculty's current perceptions about teaching and learning in relation to their current practice, before examining how use of the new technologies can alter these practices and their role as a teacher" (p. 125). LDL achieves this by identifying current and popular learning and teaching practices and introducing blended learning strategies which complement, extend, enhance or transform these practices in ways which encourage dialogic engagement and reflection by session participants. Similarly, the program responds to the institutional value placed on blended learning for student outcomes, particularly in terms of the diverse learning needs of students, as discussed above. LDL sessions regularly discuss issues of student engagement and strategies to meet students' learning needs through the use of educational technologies and blended learning. However, faculty values are often complex and moreover in a state of constant change, as the cultural and generational contexts of university teaching compete with institutional targets and pressures, strategic initiatives and workload pressures. This has

the potential to impact on staff receptivity to innovation, especially in the case of blended learning strategies, and is an ongoing challenge with which the program grapples.

The third of Wilson's dimensions requires addressing the complexity of the learning innovation and workload issues involved in its adoption. For the main part, LDL is not a dedicated training program; however the program aims to address this dimension by introducing the key functionalities of the technologies discussed in each session, including but not limited to Elluminate *Live!*, modelling pedagogical strategies and cross-promoting learning design support and training events. Finally, by its interactive nature, LDL fulfils the "trialability" and "observability" dimensions of Wilson's framework, and indeed, these are perhaps the strongest attributes of the program. As Wilson notes, "Offering faculty development online engages faculty as learners in the online environment, experiencing first-hand the use of the innovation" and this encompasses "encouraging participation in activities where they are using the new technologies themselves" (p. 126). Moreover, using modelling and active engagement strategies in Elluminate *Live!* assists academic staff to develop the required technical mastery, problem-solving skills and pedagogies which Bower (2011) identifies as essential to the successful implementation of web-conferencing technologies.

The program began in February 2010 and runs as a weekly half-hour session during each academic semester. The program targets academic staff as well as professional staff supporting academics in learning and teaching.Wide dissemination of upcoming sessions and previous recordings is achieved in coordination with Assistant Deans of Teaching and Learning in each faculty through regular email communications and in-faculty promotion. The calendar of events and session resources are also communicated via a QUT Blackboard community site housing resources relating to aspects of learning design, emerging technologies and blended learning pedagogies; this site has 304 active members (206 academic staff and 134 professional staff). The sessions comprise a mix of learning designer-led sessions and academic-led showcases of projects, innovations and reflections on practice. Each session models good pedagogical practice and contains technical support information as well as links to further support for the Elluminate *Live!* tool and for pedagogical assistance.

Research Methodology

Data relating to the LDL program was collected in three ways:

1. All participants attending the live sessions were invited to complete a Blackboard survey after the completion of each session (see survey questions below).
2. Those who viewed session recordings had the opportunity to provide unstructured feedback via a Blackboard blog or email. Some email feedback was received and this was incorporated into the survey data.
3. The number of downloads of each session recording was obtained at the end of each semester from Elluminate's Session Administration System.

Survey Questions for Participants in Live Sessions

Participants were asked to identify their role and faculty affiliation and to indicate their overall level of satisfaction with the LDL session they attended by providing feedback on the following specific areas:

1. What were the best aspects of this session?
2. What aspects of this session would you change or add to?
3. Please provide any additional comments about the session.

The collated data was analysed using thematic coding in order to ascertain the effectiveness of the program (to build academic capacity in blended learning tools and techno-pedagogies), to inform further development of the

program, and to shed light on the ways that QUT academics are engaging with the challenges, opportunities and issues raised by blended learning, particularly in reference to web-conferencing technologies.

Findings

Statistics of live session participants and recording downloads for sessions is shown in Table 1. All sessions were presented by one or more learning designers (from a team of 9 people including the manager) and sometimes co-presented with a variety of academic and professional staff.

The data reveals two important trends: significantly greater numbers of staff access the recordings than attend the live sessions; attendance levels in the live sessions have declined since Semester 1, 2010; and the number of recording downloads is greater for the earlier sessions, although this possibly reflects the cumulative effect of ongoing downloads over time.

Table 1. Summary of Learning Design Live Statistics (to 21/10/11)

Semester	Sessions	Co-presenters	Range of number of participants in a session	Total participants in all sessions	Total no. of recording downloads
1, 2010	14	2	4-37	165	500
2, 2010	12	12	3-13	109	347
1, 2011	12	6	1-9	50	266

All of the LDL topics presented are listed in Table 2, which shows that some topics have been repeated with a slightly different emphasis (e.g. topics about Elluminate *Live!*, Blackboard Tweaks and community sites).

The most popular sessions (for live and recorded sessions) were those related to the use of Elluminate *Live!*, specific Blackboard issues (e.g. site design, incorporating tweaks into a site and community sites) and particular educational technologies (e.g. PowerPoint, vodcasting and QUT's Open Web Lecture system). The least popular were those repeating past topics (e.g. "Active community sites: development and management") and some generalised topics (e.g. "Learning Design Q&A"). However, it is currently difficult to ascertain the trends in downloads for Semester 1, 2011 as download figures tend to increase over time. A final point to make is that the use of multiple presenters or co-presenters did not seem to influence the overall popularity of a session with respect to attendance or download numbers.

Table 2. Learning Design Live topics and statistics (to 07/07/11)

Session title	Presenters	Co-presenters	Live participants	Downloads	Surveys complet
SEM 1, 2010					
1. Introduction to Elluminate *Live!*	1	0	37	137	17

2. Spring clean your Blackboard site	1	0	11	41	2
3. Site Design: Taking curriculum design online	1	0	13	52	0
4. Moderating Online Interactions	1	0	11	29	2
5. Vodcasting 101	1	0	13	39	2
6. Using PowerPoint effectively in your teaching	1	0	16	47	3
7. Creating Communities of Practice	1	0	6	39	0
8. Teaching with Elluminate *Live!*	1	0	13	27	1
9. QUT Lecture Recording System	2	1	13	12	1
10. Engaging Learners Online	1	0	4	10	0
11. Online Assessment and Blackboard Grade Centre Tips	1	1	6	17	0
12. Creating narrated presentations with authorPOINT Lite	1	0	7	25	0
13. Learning Design Q & A	1	0	6	6	0
14. Preparing Blackboard sites for Semester 2	1	0	9	19	2
TOTALS		2	165	500	30
SEM 2, 2010					
1. Top tips for Blackboard	1	0	9	31	1
2. What's new in Elluminate version 10	1	0	5	25	1
3. Supporting International Students	1	1	11	12	0
4. Blackboard Community Sites	1	2	8	11	0
5. Tweet if you're learning (Creative Industries)	1	2	13	17	1
6. Enhancing teaching and learning (and things mathematical!) with digital ink and screencasting (Science and Technology)	1	1	12	9	3
7. Flexible Learning Initiatives Project (Law)	1	0	7	9	0
8. Getting wiki with it (Teaching and assessing with Blackboard wikis) (Business)	1	2	13	9	3

9. Flexible Approaches to Podcasting (Built Environment & Engineering)	1	1	7	10	0
10. Using Xerte and multimedia for active learning (Law)	1	1	9	30	2
11. Toys and Tools - enhancing learning for diverse students (Education)	1	1	12	16	2
12. Using Communication Tools: It's not that hard! (Health)	1	1	3	8	0
TOTALS		12	109	187	13
SEM 1, 2011					
1. Effective Tweaks	2	1	4	34	0
2. Engaging conversations for learning through asynchronous discussions	1	0	2	(not recorded)	0
3. Special focus: OWL (Open Web Lecture)	2	1	7	22	0
4. Forum: Approaches to learning and teaching with Elluminate *Live!*	1	1	8	15	0
5. Authentic Learning and Assessment	1	0	1	5	1
6. Integrating Library Resources	1	2	5	18	0
7. Active community sites: development and management	1	1	1	4	0
8. A conference catchup	4	0	1	5	1
9. Getting the message across in 5 mins: Using free online tools to record screencasts	2	0	2	4	2
10. iPad uses in T&L	1	0	6	21	3
11. Blackboard 9.1 Upgrade - Part I	2	0	4	12	2
12. Blackboard 9.1 Upgrade - Part II	2	0	9	25	4
TOTALS		6	50	165	11

The numbers of Blackboard surveys completed after each session has decreased each semester from 30 to 13 to 11 for successive semesters. However, useful feedback has been obtained as summarised below.

LDL has received general positive feedback for both the live sessions and recordings:

- *It is great to hear of people using these tools in class and also how students interact with such classroom environments. This was a well paced, informative session with good opportunities to share knowledge and experiences.*
- *I like the choice of joining the session live, especially if I know I might have questions along the way, or viewing the recording at a time that I am available to.*
- *I'm hoping to keep engaging with these sessions (live or recorded!) as I am finding them very useful in terms of introducing new modalities for learning and ways to organise blackboard in more effective ways!*

Participants prefer sessions that are practical, informative, concise and relevant:

13. *I liked the actual practicality of it all.*
14. *This was good: I could follow step by step.*
15. *It was great and really helpful. Lots of useful and practical tips for making my Blackboard site schmicker. Thanks!*
7. *Good overview of the current projects. Links to the material available. Interactive nature, allowing feedback and info to be posted from all participants.*
8. *Very useful mechanism for keeping up with T&L developments.*

Sessions that provide insights into using Elluminate *Live!* received positive feedback:

- *Excellent! Can't wait to use this - it is going to be so helpful working with external students :)*
- *There is always something in Elluminate Live that I find useful and applicable to our teaching and learning contexts. Keep up the good work!*
- *Using Elluminate Live! for the first time and seeing how good it is. And the info was interesting despite the fact that I don't really need to use a lot of it. some more examples of new applications. Very good outline in limited time.*
- *I appreciate the opportunity to participate in the session- I learned a lot! This has really encouraged me to look into ways to use Elluminate in my teaching so thank you. It was also fun!*

Sessions that experienced technical difficulties or were seen to be too difficult, basic or inaccurate were unpopular:

4. *I have noted that a number of LATTE session recordings would be substantially improved by post-production editing, particularly where presenter(s) materials do not work, and/or there are delays or other glitches while the recording process continues.*
5. *It went too fast for me. Should address different skill levels. May be I need a one-to one training with this.*
6. *Too much on basics and not enough on advanced functions. I do not feel it met the objectives of the session.*
7. *I feel I knew more than the presenter covered.*

Conclusions

The most significant benefits of LDL for different stakeholders are listed here:

5. Participants: It has been worthwhile for staff to experience Elluminate *Live!* and other blended learning strategies from a student's perspective before implementing in their own teaching and to engage in cross-faculty discussions and teaching approaches. In particular, academic-led or co-presented sessions promote a diverse range of ideas and teaching approaches both about using Elluminate *Live!* and employing other educational technologies.

6. Learning Design Team: LDL has provided capacity building opportunities for team members since it draws on the strengths and interests of the team, fosters collaboration and has developed the team's skills and understanding of using Elluminate *Live!* for a variety of purposes. It has also helped the team to identify short and long term goals (that align with eLearning Services strategic goals) and helped to build an identity for the team at QUT.
7. Institution: findings from the LDL program have informed policy and guidelines related to blended learning and teaching and assisted in promoting learning and teaching approaches used by academics within and across faculties.

The LDL program is continuing to evolve but has not been without its challenges:

8. Scheduling sessions at appropriate times to maximise synchronous attendance has been only partially successful, given the competing commitments many academic and professional staff must manage.
9. The choice of topics requires constant dialogue with stakeholders but fostering such dialogue is challenging and does not necessarily result in a popular session.
10. We have needed to rethink what to present in the live sessions in view of the fact that most sessions will be viewed as recordings.
11. Technical problems within the session impact negatively on participant experience and potentially impact on staff willingness to adopt the demonstrated tools or strategies; prior testing is therefore of paramount importance.
12. It has been challenging to maintain a community of practice around LDL. Staff have not been as engaged in offering feedback or ideas for future sessions as expected and ways of encouraging this need to be further explored, including greater feedback to participants on survey results.

Reflections

The program has offered insights on the issue of engagement with blended learning. Most notably, it would appear that staff, especially academic staff, share many of the diverse learning needs and interests as their students: for example, they have a range of motivations and expectations of their professional development, they often have competing commitments which impact on their availability for synchronous learning, and they bring a wide variety of technical and pedagogic competencies to the learning activities. Participant feedback and attendance/download statistics indicate that the blended learning strategies employed in LDL have had success in supporting these diverse needs and interests, especially in terms of the different kinds of blended learning strategies covered, the variety of learning activities afforded, and the ability to create both synchronous and asynchronous experiences. However, while the program aims to foster a community of practice around blended learning, the participants themselves often want "just in time" resources rather than investing in ongoing dialogic interactions with colleagues, which is a challenge the program continues to grapple with from a professional development perspective, and also in terms of the implications for student engagement in blended learning.

The dominant trend of much higher rates of session downloads than live attendees brings into focus a key design challenge of web-conferencing and other forms of blended learning where both synchronous and asynchronous participation is possible: that is, to create learning experiences which include interactivities for live participation, yet also foster active learning for participants viewing the sessions asynchronously. As this is also a problem frequently raised by academic staff teaching via web-conferencing at QUT, future iterations of the program will aim to support and develop these important design skills and engage with the more fundamental question of whether the perceived primacy of synchronous learning is necessarily justified. This process will require further evaluation of the impact of LDL, especially in terms of student learning outcomes.

There remains the ongoing challenge of maintaining staff engagement in the program in the long term, which requires new strategies in terms of objectives, design and communication. Some planned future activities in this

area of the program will include more face-to-face development and networking opportunities for participants, changing delivery modes to capitalise on physical spaces as an essential part of the blended learning experience, and a re-evaluation of the location and type of support resources provided to staff.

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