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# Stop lecturing me, I want to learn

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Re-evaluation of pedagogical practice is driving learning design at Queensland University of Technology. One objective is to support approaches to increase student engagement and attendance in physical and virtual learning spaces through opportunities for active and problem-based learning. This paper provides an overview and preliminary evaluation of the pilot of one of these initiatives, the Open Web Lecture (OWL), a new web-based student response application that seamlessly integrates a virtual learning environment within a physical learning space.

Keywords: physical virtual learning environments, student response systems, engagement, OWL

## Rethinking the traditional lecture

Traditional lectures are changing and thought must be put to how the alternatives for increasing student engagement and attendance in physical learning spaces are influenced by the elements within existing learning frameworks: pedagogy, space, technology and people (Radcliffe, 2009; Mitchell & White, 2010; JISC, 2006). If we examine these elements and correlate the pace of change against each one, an interesting paradigm emerges in which pedagogy is not evolving at the same rate as the other elements of the framework.

The pace at which technology is developing is intensifying and offers many opportunities for engaging learners in a variety of learning modes and also offers the possibilities of design-based research (Amiel & Reeves, 2008). The redevelopment of physical learning spaces has been the focal point for many universities seeking to engage staff and students with a range of new approaches to learning and teaching. This rich blend of technology and flexible learning spaces promotes both active and problem-based learning (Bonwell & Eison, 1991; Boud, & Feletti, 1997). In comparison, changes in pedagogical practice in higher education are happening at a much slower pace. Emerging from this disparity is a dynamic interplay between students, staff and technology. This interplay is challenging the value of attendance and engagement in physical learning spaces, especially for traditional lectures to large classes. Why should students attend lectures devoted to content delivery when web technologies and streaming replicate the learning opportunity in a more flexible mode (Corbin, Burns, & Chrzanowski, 2011; Kardong-Edgren, & Emerson, 2010; Dolnicar, Vialle, Kaiser, & Matus, 2009; Dolnicar, 2005)? Should we still just lecture? Empty seats in lecture theatres speak volumes regarding the pragmatic nature of student decisions (Corbin et al., 2011; Dolnicar, 2005).

Non-attendance poses risks for performance and motivation, and diminishes interaction with lecturers and other students (Arulampalam, Naylor, & Smith, 2007; University College London, 2007; Massingham & Herrington,

2006). Yet the decision to attend might be more heavily influenced by whether the student perceives the material or the lecturer to be interesting, or anticipates that the material will include assessable information not otherwise available (Gump, 2004; Westrick, Helms, McDonough, & Breland, 2009). This interplay of elements within the learning framework warrants a reconsideration of pedagogy with a view to improving the quality of the learning experience (Laurillard, 2008a), and this reconsideration should address student engagement and exploit attendance as an opportunity for active learning (Ramsden, 1992; Phillips, Preston, Roberts, Cumming-Potvin, Herrington, Maor, et al., 2010).

## The Design

A re-evaluation of pedagogical practice presents opportunities to create effective learning environments in both physical and virtual spaces by increasing student engagement in active learning within large lectures (Laurillard, 2008b, 2009; Stacey & Gerbic, 2009). The Open Web Lecture (OWL) is a new web-based student response application developed by Queensland University of Technology to seamlessly integrate a virtual learning environment within the physical learning space.

The technology has been design to facilitate a *live collaborative*; a fluid collaboration between academics and students connected to OWL via the QUT's Wi-Fi network, using laptops or web-enabled mobile devices. The application offers opportunities for the lecturer and students to post comments, questions, and reply to or 'like' the comments of other participants. OWL facilitates polling of students and instant review of tabulated results. At the completion of the lecture the OWL session is automatically archived for subsequent review. Many of these features instinctively appeal to student users of social networking media, yet avail the academic of control within the university network. Student privacy is respected through a system that preserves peer–peer anonymity, a functionality that seeks to address a traditional reluctance to speak up in large classes. This offers new possibilities for active learning in physical spaces by providing increased opportunities for student engagement, supporting a range of learners and learning activities, and fostering a blended learning experience.

OWL has been designed to enable:

- a virtual learning experience within physical spaces for large group lectures, seminar groups, workshops and conferences
- the creation of a non-intimidating virtual learning environment in which to ask questions anonymously
- the promotion of a learning community
- instant exchange of feedback
- peer support
- opportunities for active and problem-based learning within the lecture.

## The pilot

The OWL pilot began in 2010 across three faculties: Education, Built Environment and Engineering, and Law. Law introduced OWL within four core undergraduate units undertaken by second and third year students with five members of the academic staff, all of whom undertook training in the use of the application prior to its use. The faculties of Education and Built Environment and Engineering introduced the application within specific undergraduate units. OWL has also been used to facilitate a number of events for staff and students across the university.

Potential barriers to learning with this new type of technology were identified, including: technical issues in relation to connection and use; financial burden of using personal 3G data and not the university's free WiFi; lack of a device with which to connect; equity issues associated with the quality of the learning experience for those students unable to or electing not to connect; and the potential for misuse/inappropriate posts. These potential barriers were addressed through a number of initiatives. A preliminary and in-class support model, offering both technical and pedagogical support was introduced. The focus of the preliminary support was on the effective design of learning activities to integrate the technology within lectures and user training. The university's student help desk and the dissemination of instructional material provided preliminary support for students, while in-class technical assistance was provided for the first lectures using OWL. Students were encouraged to connect to the web application via QUT's WiFi, eliminating any financial burden on them. The QUT Library loaned laptops to students in need of a device to connect to OWL; however, there was a low student uptake on loans for this purpose.

Use of the OWL application was optional for students. In order to ensure that OWL could still be used as a springboard for active learning for students either unable to or choosing not to connect, a number of initiatives were implemented. Where OWL was used in lectures, the lectures were recorded with screen capture and made available via podcast and the units' websites. Where polls were conducted, hard copies were distributed and made available for download from the unit's website. The lecturer was able to display a live stream of posts or poll results to direct/stimulate class discussion on the projector. In this way students not wirelessly connected could still enjoy the benefits of the stimuli provided by the learning activities occurring within OWL.

Davies and Lee have warned that virtual education involving engagement with social networking technologies will increasingly have to cope with the potential for malign user behaviour as the 'virtual education world' expands (Davies & Lee, 2008, p. 260). While social networking sites offer effective and popular means of facilitating communication, there is no guarantee that student users will adhere to a university's internet use agreement. Universities seeking to minimise potential for offensive or potentially defamatory postings would prefer to have the capacity to take down posts. The OWL application provided functionality to 'warn' and 'block' students at the lecturer's discretion, and students were aware that the lecturer could see the identity of all student postings. While novelty posts sometimes occurred on first use of the application, the expectation of appropriate behaviour rendered the control functions almost obsolete.

While OWL provided opportunities for greater connectedness within the lecture environment, 'connectedness per se does not ensure interaction let alone emergent learning' (Williams, Karousou, & Mackness, 2011, p. 51). Lecturers were encouraged to use the virtual environment created by OWL as a springboard to active learning through high quality face-to-face, peer–peer, student–lecturer interaction (Williams et al., 2011; Braxton, Milem, & Sullivan, 2000; Popkess & McDaniel, 2011). The live stream discussion was used *by the lecturer* to pose questions to students and *by students* making comments about the lecture content and posing questions to the lecturer or other students. In some units students were encouraged to use the live stream discursive to generate checklists and terminology dictionaries. A number of units used OWL as a platform for small group problem solving, followed by an OWL poll devised to provide feedback to students as to the extent of their understanding of the lectured material and how it should be applied to the problem.

## Preliminary evaluation

The OWL student surveys captured a range of data regarding their use of the technology, level of engagement and method of participation. All students attending the last lecture of the semester for each unit were invited to participate in the survey and 244 students completed it. The data collected was de-identified and grouped by faculty and unit for analysis.

**Table 1: Preliminary pilot survey results**

| Survey question | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| The lecture sessions using OWL were engaging | 24% | 52% | 22% | 1% | 1% |
| OWL helped me to get involved in the lecture session | 24% | 38% | 28% | 7% | 3% |
| The learning activities in lecture sessions using OWL were relevant | 32% | 49% | 16% | 3% | 0% |

As illustrated in Table 1, the data collected presents evidence of the impact on student engagement, with the survey results showing lectures that used OWL were 'engaging'. If we correlate these figures against the student response to the question 'OWL helped me get involved ...' the emergent pattern provides us with insight into the impact of this type of technology on the student learning experience. The relevance of the learning activities was a key aspect of this inquiry, showing a high proportion of positive feedback that was apparent throughout the whole sample and not isolated to engagement-focused questions. The trends in the survey results are consistent with earlier research into the effectiveness of using personal response systems or 'clickers' in lectures. The findings are consistent with those of Hunter Revell and McCurry, who found that students both enjoyed and were comfortable using the technology in class and, further, that students and faculties perceived such technology to be 'effective in engaging students, fostering critical thinking and improving learning outcomes in both the small and large classes' (Hunter Revell & McCurry, 2010, p. 274). The low level of negative feedback from students was assessed through analysis of those students' responses to the survey's open-ended questions, particularly 'Comments and suggestions for improvement'. This revealed that their negative experience was related to the lecturer's use of the technology or the student's capacity to connect to OWL.

The rapid pace of technological innovation offers education unique opportunities for live web-based applications like OWL to continue to evolve, blending the physical and virtual space to engage learners and challenge the interplay between pedagogy, space, technology and people (Radcliffe, 2009; Mitchell & White, 2010; JISC, 2006). As we seek opportunities to rethink pedagogical practice, applications like OWL have shown their potential in learning and teaching. As the pilot of OWL continues throughout 2011, the preliminary data collected is serving to inform the future direction of these types of technologies within Queensland University of Technology.

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