



## Engagement at the Epicentre

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Following the February 22nd, 2011 earthquake in Christchurch, Learning Advisors observed what happened to an institution forced to suddenly confront significant damage and loss of physical teaching space and infrastructure on only the second day of the teaching Semester. The university's struggle to restore and deliver its teaching programme and care for the welfare of staff and students, was a laboratory for observing lecturer interventions that contributed to maintaining student engagement and good pedagogy. This is a record of our observations from a case study sample of lecturers and their courses.

Keywords: student engagement, pedagogy, crisis, e-learning, Moodle, course design

## Background

On February 22nd 2011 a major earthquake struck Christchurch forcing the evacuation and closure of Canterbury University. The institution was forced to suddenly confront significant damage and loss of physical teaching space and infrastructure on the second day of Semester One. As in many other tertiary institutions (Meyer & Wilson, 2011) there was no plan for academic continuity in place, yet it was necessary to adopt strategies for delivering courses and supporting students online from a city with severely damaged infrastructure. As Learning Advisors, we wanted to take advantage of a rich source of data that presented itself in the period following the earthquake to obtain insights into lecturer and student engagement. Although we could not be certain that the observed changes in engagement came about because of particular lecturer interventions with their students rather than the effects of the earthquake itself, we felt that it was worthwhile. In this concise paper we document lecturer reactions and strategies using technology to compensate for the loss of physical spaces and subsequent opportunities for face-to-face interaction with students. To frame our investigation we posed the question: How did lecturers engage students in a time of crisis and did it show good pedagogy? The observations of student engagement in this context were explored through the lens of the lecturers' reaction to the situation and their perception of the students' engagement.

## Methodology

From a constructivist perspective, fostering student engagement is essential for learning in a social context, so a single-case design was chosen as the methodology for exploring and giving in-depth description of a social phenomenon (Yin, 2009). We wanted to examine contemporary events where, as Yin suggests, it is not possible to manipulate all the relevant behaviours, a contemporary phenomenon can still be investigated within its real-life context. Conole and Oliver (2006) acknowledge the richness and contextually located value of case studies in describing the details of particular pedagogical interventions, but warn of the difficulty of re-purposing or adapting them to other contexts. We felt that particular teaching interventions uncovered by our snapshot could identify useful strategies for engagement in hazardous circumstances alongside other studies which took place where disasters have occurred and where higher education institutions have continued to provide access to education (SchWeber, 2008). Following approval by the university's Ethics Committee, three learning advisors recruited twelve lecturers and conducted semi-structured interviews with a set of agreed-upon questions. The lecturers chosen were a purposive sample of those who had worked with the learning advisors, and demonstrated the implementation of a variety of interventions. The validity of our findings was strengthened by triangulation of additional sources - from Moodle server logs and statistics of access and use, particularly Moodle tools such as News, discussion forums, group functionality and resources including audio and video files.

To help us to identify student engagement strategies and look for signs of good pedagogy, we used existing learning models or frameworks. We identified practices that enhance engagement such as: encouraging contact between students and faculty (Chickering & Gamson, 1999); providing mechanisms for interaction with teaching staff and other students (Marshall, 2010) and incorporating activities which demand that students devote time and effort to purposeful activities (Kuh, 2008). We were conscious of the limitations of applying only elements of these frameworks to the behaviours we observed. Time was of the essence however and we wanted to capture rich data before there was a return to face-to-face teaching opportunities on campus. We wanted to capture a slice of lecturer activity in (re)design of courses and gain insight into lecturer interventions. These frameworks were helpful in benchmarking our observations using recognized criteria.

## Findings

### *Issues*

The immediate concerns of lecturers interviewed revealed a tension between a need to prioritize the validity and integrity of the course and a strong concern for students' welfare. Issues to be dealt with included the viability of a course in which "previous experience showed that face to face contact was really important" (L5, interview, 19 May). Meeting the challenge of teaching during this crisis was helped by the extent of teaching experience, particularly with the subject matter. A lecturer commented that they had taught the course for the last five years so found the changed format very rewarding but felt that if they had been in their first year of teaching the course, they "would have freaked out" (L10, interview, 6 April). Removing the opportunity for physical contact with students brought anxieties for lecturers about how this element of their course could be replicated virtually and how their course as a whole might translate to the changed environment. Two of the interviewees felt that the physical separation of students and staff created a sense of isolation. Several lecturers commented on the importance of student engagement and how the loss of on campus physical space made this more difficult. One lecturer provided a physical space in their home where the students could gather to learn. The provision of tent space also provided challenges which forced the lecturers to adapt. The tents were seen as a flexible space opportunity by two lecturers. The furniture here was moved and the usual lecture time was used instead for discussion and problem solving sessions using content already delivered online.

### *Communication and community*

The interviews also highlighted particular interventions that lecturers put into place in order to re-start their courses. Some lecturers who already had course sites developed for on-campus and distance students, felt prepared. "I knew my Learn [Moodle] site was ready... Everything was there ... and we just switched to distance" (L7, interview, 13 June). Most lecturers though weren't prepared, and endeavoured to develop alternative teaching strategies which were more student-focused and encouraged deeper, more active student engagement with the course content. The creation of community was seen as important because students were not only dealing with their learning but struggling with personal issues post-earthquake. The university's Moodle learning management system (LMS) played an important role for all those interviewed. Although Moodle was used in different ways, common trends were observed. "The big tool was Learn [Moodle] for getting in contact with the students and to coordinate the resources" (L10, interview, 6 April). Regular communication with students via two-way discussion forum posts or one-way news forum posts was common.

News forum posts (3,790) between February 23 and March 31 2011 increased 88.4% compared with the same period in 2010. Lecturers used the online communication tool to engage students and express concern for their welfare. One lecturer expressed this in reminding students that the most important point to remember for online learning was to engage. “So do respond as it will allow us to develop and change as we proceed” (L1, Moodle News post, 10 March). A strong concern for student welfare was expressed in a News post which said:

[We] are thinking about you during this terrible week, especially those of you who have suffered loss and damage, and those for whom this was the first week at University and away from home. The first priority for you all is to take care and look after family and loved ones. If there is anyone who is struggling please let me know and I can arrange for support and any guidance.”  
(L3, Moodle News post, 25 February).

Negotiating a way forward with students and sharing personal circumstances strengthened the faculty-student relationship in an environment where most lecturers had not yet had an opportunity to meet their students face-to-face. One lecturer expressed this need to connect with and engage students online instead by urging them to personalize their profile in Moodle by adding a photograph. “I think it’s nice to be able to picture who we are talking to, if we can’t physically sit around a table looking at each other” (L4, Moodle News post, 13 March).

### *Content Delivery*

For some who already had much of their course content available on their Moodle site, the focus became supporting and encouraging students to engage with that content. Several methods were described as being successful. Many lecturers considered that organization was a key in helping students. Communication, anticipation of student queries, and clear, well organised Moodle course sites helped to provide structure. Clear directions, overviews, outlines and summaries within the sections of the Moodle site, as well as considerable scaffolding and modelling of tasks by lecturers, were also successful strategies in keeping students focused and in guiding them through the course content. A weekly course format in Moodle was favoured by several lecturers. One chose to call their section content the ‘Weekly directions’, in view of the need for students “to focus on the week at hand” (L3, interview, 19 May). This format was thought to make it easier to continue teaching following any further interruptions due to aftershocks. This format was used elsewhere to help students stay focused, “Every week or so I put a comment up ‘You should be doing this, you should be doing that’ and I’ve interacted with them during the week” (L7, interview, 13 June).

Lecturers who had already begun to develop their use of the online environment as a part of their teaching strategy, were in a better position to engage their students in a pedagogically sound way through the use of Moodle. For some lecturers the focus was on making sure the course content was available for students to engage with off campus. The lack of access to traditional resources such as library books and textbooks led to more resources being put online. Lecturers were not only concerned about student ability to access online content so none was disadvantaged, but also their ability to deal with an overwhelming number of resources put online. Course content was made available in combinations of text, video and audio formats. The strategy of using audio files to accompany *PowerPoint* slides was developed by several lecturers interviewed as a better strategy for on-line delivery than video recording a 50 minute lecture. Video recordings which were used were much shorter in duration, and focused on particular difficult concepts or were designed to direct students to engage in active learning at points during the recording. For some lecturers a “live” component of their teaching was preserved through the use of *Adobe Connect*. “If I had this live session where they could see me, and hear me, and chat, and chat privately to me that would be a form of [digital] ‘hand holding’” (L6, interview, 24 May).

### *Tutorials and Assessment*

Material usually shared in tutorials was made available within the Moodle course sites. One lecturer whose ‘hands on’ tutorials were an essential part of the course created videos that captured essential information presented on *PowerPoint* slides along with a physical demonstration of the concepts. In several cases, tutorial group work was translated into the online environment to encourage active student engagement. Face-to-face group work was replaced by forum posts, and engagement may have increased because students had “more pressure on them to put the effort in” (L5, interview, 19 May). Lecturers commented on the way in which the quieter students in their courses were able to contribute more through forums, and be recognised for the value of their contribution. Once tutorials were online, engagement and participation needed to be assessed differently and this encouraged innovation. Some lecturers incorporated the content of students’ discussion forum posts into their assessment. “I give them feedback every week on their discussion participation” (L6, interview, 24 May). “Under the system I had set up, all of these [forum posts] count as contributions to their assessment.” (L5, interview, 19 May). One lecturer felt that the pedagogical intentions of traditional group work were successfully

replicated online, so with the core of the course becoming more tutorial-focused, they assessed tutorial responses rather than relying on the exam. The students in this course chose their own groups, topics and forum posts to be submitted for assessment. This lecturer felt that the transfer of responsibility for learning to the students was the reason for what was perceived to be more thoughtful and better quality responses than expected from the students in the online tutorials. A change to assessment was another intervention introduced by many lecturers. On-campus assessment, particularly when it was scheduled for early on in a course, was most often removed and alternatives put in place. "I dropped off the test because that is usually a source of anxiety." (L11, interview, 10 May). Lecturers developed alternative assessment which made allowances for students who were now unable to complete all the planned work due to lack of resources and a compressed semester. These alternatives included 'take home' assessments, online quizzes and assessment of tutorial and forum contributions.

#### *Student Reactions*

General impressions of student engagement within courses, and student feedback obtained by lecturers from student forum posts and post-earthquake teaching sessions, were predominantly positive. "My sense is, because of the level of thinking that I'm seeing in the discussions, that they are doing a really good job, and that they are enjoying it" (L6, interview, 24 May). The students involved in the course taking place in a home, were very positive about the experience. When an opportunity arose for them to have a learning space back on campus they chose to stay where they were instead. Students reacted more positively to approaches which in past semesters would have been unpopular. One lecturer made the comment that if they had tried to have one out of every two lecture slots as a question time session in a traditional academic year, it would have fallen flat. Circumstances had forced students to work on their own and the opportunity to discuss questions together was deemed important. Another lecturer noted that students used an online glossary activity more often. It was thought that the students felt overwhelmed and this feature allowed them to find succinct answers quickly to common questions. While some courses were cancelled, student numbers in other courses increased after the earthquake, by up to 39% in one case. Because of the availability of course content and the online record of much of the class interaction, students who enrolled in a course late were able to catch up and complete their work alongside their peers. "[They] could then access the readings and the conversations from before they entered, [and] felt connected" (L5, interview, 19 May). Students also seemed to appreciate the quick responses they received through forum communications from lecturers, and fewer students attended scheduled lecturer 'office hours' in some cases. They reacted positively to material being placed online and the feedback received in one instance was that the material was well paced and "they liked being able to stop the audio and replaying it" (L10, interview, 7 April). One lecturer observed that attendance at face-to-face lectures, once they re-started, was down to about two thirds of those enrolled and thought that the addition of audio files to augment *PowerPoint* presentations could have been a contributing factor.

#### *Positive outcomes*

Comments in the interviews revealed some positive outcomes of the earthquake for lecturers. One vowed to "keep all the adaptations, because I think I've learned how valuable the [Moodle] site is" (L7, interview, 13 June). Lecturers found many of the interventions they implemented had appeared to enhance student engagement and they would choose to use these in future iterations of their courses. Interviews highlighted structured forum discussions, the use of discussion forums for smaller groups of students within a course, adaptations to assessments, and the recording of lectures as successful strategies to be retained. The use of audio with *PowerPoint* could, in future, supplement the face-to-face lecture, especially for challenging topics, "amplifying certain points and clarify[ing] certain things that might not be immediately apparent from the *PowerPoint* themselves" (L9, interview, 7 April). One lecturer commented that the use of audio files provided the opportunity for students to review and engage with their learning and to accommodate clashes with other courses or commitments. Lecturers reported feeling more of a connection to their students. "I think I got to know the students who posted between the earthquake and when we met up face to face, really well" (L5, interview, 19 May).

The crisis had encouraged some lecturers to think more about pedagogy and the need for students to take more responsibility for their learning, as well as providing the opportunity for lecturers to reflect on their teaching. The necessary course modifications had encouraged reflection and made lecturers aware of the need to reinvigorate their teaching. "I've had to really think very carefully about my teaching and learning objectives, and they're a lot more precise now" (L6, interview, 24 May). A lecturer who was already prepared for teaching some of their students at a distance commented that they had, "an emergency system in place that we weren't expecting to become an emergency system, and yet it worked well." (L7, interview, 13 June). Reflection also involved "thinking much more clearly now about 'first principles'" (L1, interview, 23 May) and about what was working and what wasn't. A lecturer who felt that their course content had not essentially changed but evaluation of its pedagogical intent had, felt that:

the earthquake [was] in a sense a great laboratory in which... I've now had to both think both about the theory and [practice] ...getting to the goal in a more positive way... I feel that more students are actively engaged. (L2, interview, 19 May)

In a number of interviews lecturers expressed relief at a return to spaces that allowed them to meet with students regularly. Online and face-to-face aspects of the course working together as a blend was seen as valuable. While all lecturers interviewed said they would continue developing the online aspect of their course, they also mentioned the continuing importance of face-to-face interaction with their students and not just student interaction with the course content.

## Conclusions

There was a need to focus on student engagement and maintain it in spite of changing from a face-to-face course to a blended or completely online one, one day after the teaching Semester began. We felt that because of the earthquake disruption lecturers gained sometimes revelatory insights into their course design and teaching strategies. The crisis situation forced lecturers to review course delivery strategies, focus on maintaining learning outcomes and recognise the need to engage students and maintain or re-create the physical environment in the virtual space. Some lecturers came to realise that engaging students was not confined to meeting them in lectures and tutorials but had more to do with a willingness to engage with students. Within the laboratory situation, which required risk-taking, came the freedom to re-negotiate the course's essential elements. The need to re-work face-to-face tutorials for an online format was a major catalyst for innovative changes to courses, as was the incorporation of increased formative assessment. There was not only more reliance on Moodle tools (especially the communication tools) but more recognition of the role of online learning as a blend, evidenced in the desire expressed in lecturer interviews to retain elements of the redesigned course format in future offerings of the course. Lecturers were using technology to facilitate student engagement, rather than the physical teaching space. We hope to build on what we have learned from the impact of the Christchurch earthquake on our institution and the way it encouraged affordances of teaching pedagogy that might not have occurred but for the crisis. A situation such as this, demonstrates the importance of establishing and maintaining student engagement as a centre-piece of course design. We felt that engagement at the epicentre saw us through.

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## Acknowledgments

University of Canterbury staff for their permission to use material from interviews and Moodle course data

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**Please cite as:** Monti, A., Tull, S., Hoskin, A. (2011). Engagement at the Epicentre. In G. Williams, P. Statham, N. Brown & B. Cleland (Eds.), *Changing Demands, Changing Directions. Proceedings ascilite Hobart 2011*. (pp.874-879). <https://doi.org/10.14742/apubs.2011.1819>

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