

2010 Reports

E-LEARNING ENHANCEMENT

Dr Phil Blyth

OpenSimulator Acute Care by Team (OSACT)

The Otago Virtual Hospital (OVH) is based in a virtual world where medical students play the role of virtual doctors. As avatars, they are able to walk around the virtual emergency department, take histories and examine virtual patients, request investigations, prescribe and otherwise treat their patients. The OVH runs on an OpenSim server and students use the SecondLife software to enter the virtual hospital. The scenarios are open-ended clinical cases, which ensure that students are in-charge of the entire management of the patient, and must prioritize and deal with all the issues with which the patient presents, as well as any effects of their treatment of the patient. The OVH allows teaching staff to assess students' behaviour and decision making skills, by examining the transcripts of the chat-log, as well as the recorded investigations and treatments provided by the software. Scripts have been developed which allow students to role-play as the patients so the scenarios are not reliant on staff being present.

A substantial aspect of the project was looking at the assessment of the performance of the students, this is a complex area, however the group has made significant progress towards developing a framework for assessing dispositional behaviours.

Professor Michael Eccles

e-Melanoma Database for Student Teaching

The MELT database is an e-learning platform for melanoma (e-Melanoma e-learning tool), both for improving the recognition of melanoma and for teaching students. Designed to teach and evaluate knowledge uptake, it will be useful as a tutorial companion or tool for both medical and medical-aligned subjects. For example, it will be useful in courses taken by both medical and medical science students, particularly in the area of pathology. It is hoped that its use will facilitate earlier melanoma detection, and that it will provide skills of melanoma recognition that significantly enhance dermatological training and the teaching of cancer pathology in the Dunedin School of Medicine. The developed e-Melanoma database would also be used as a reference database for biomedical researchers, post-graduate biomedical research students, and medical students. In addition it is envisaged that eventually the database will also be linked with the Melanoma Foundation and/or MelNet websites for broader access.

Professor Henry Johnson

Digital Interactive Gamelan

The Department of Music's Central Javanese gamelan (Indonesian percussion) has long been a part of creative music-making on campus since it was acquired in 1996. Today, the gamelan is utilised by a variety of people within the University community, including members of the established ensemble Pusparwarna Gamelan, and the many students who take 'world music' papers as part of a MusB or BA degree. Staff members Dr Shelley Brunt and Professor Henry Johnson, both of whom are involved with the gamelan, identified some of the limitations of teaching using this specialist resource, and undertook the CALT project of producing the iGamelan—an easy-to-access digital interactive gamelan—in 2010/2011. This online resource facilitates student learning about the ensemble's instruments, performance practices and cultural background in a flexible learning context; and it functions as a virtual tool that facilitates and complements the learning process before, during and after the practical classes on the Department of Music's Central Javanese gamelan. Overall, the iGamelan recontextualizes traditional music and musical instruments into a contemporary teaching context where flexible learning is complemented by modern-day technology and innovative approaches to e-learning.

Dr Gisela Sole

Learning resources to support undergraduate physiotherapy students

Practical skills are important for physiotherapy students for assessment and treatment of patients with musculoskeletal disorders. These skills are traditionally taught in laboratories with demonstrations by tutors. Students are required to practice these skills which are assessed in structures practical examinations, and applied during clinical practice. This project entailed the development of a DVD-formatted video to facilitate and complement self-directed learning. An informal focus group discussion with clinical educators and laboratory tutors confirmed inclusion of relevant techniques. Filming of the techniques proceeded with physiotherapy students acting as "patient models" and teaching staff as "clinicians". Implementation of the DVD followed during the second half of the PHTY254 Musculoskeletal Physiotherapy module (2010), allowing students to experience learning with and without the resource. Focus groups were held with students and staff members to explore their perceptions of the usefulness of the resource. The DVD was perceived by the students to have increased their confidence and provided an additional method of acquiring manual skills. Most students reported using the DVD primarily for revision, rather than preparation for laboratories. Staff should reconsider methods to incorporate the DVD into pre-laboratory preparation to encourage prior learning. Based on suggestions from students and staff, a similar resource was developed for Year 3.

Dr Roel Wijland

MART 330 Creative Marketing Communication

In summary, the MART 330 collaborative digital platform aims to take the next step in creative and evaluative, in peer-review and open-sourced community learning – all within the dedicated field of business aesthetics. It builds on existing collaborative network developments and uses the repository of Unitube. The aim is to have students working on a portfolio of 13 weekly themes in the context of

the form of marketing communications in an interactive process with their peers and lecturers – and prepare this for final reflection, assessment and part publication at the end. This infuses the learning process with the necessary criticality, but also serves to make students aware that as marketers they will be working in an open sourced producer/consumer environment, and in their future vocational field will no longer be working in a top down ‘campaign’ culture. The proposed digital structure represents the various levels of feedback they may expect to receive on their work. This web based course needs an on-line presence that is credible for the marketing communication industry and its best cases should display Otago’s best students to premier players in the field. Weekly assignments are approximately 70% of an evaluative nature, and 30% of a creative development nature.

The goal of the project is to design and program a collaborative digital learning environment that is:

- innovative in its approach to business aesthetics,
- reflective of the speed of creation and evaluation in an increasingly digitized marketing vocation,
- capable of representing multi-media expressions,
- ground-breaking with regards to real-time learning interactivity at a communal group and individual peer talent level.

Associate Professor Michael Winikoff

Mobile Learning: Supporting and enhancing the Zoology curriculum at Otago

Powerful mobile devices are becoming more common, with an increasing level of ownership of a range of mobile devices being reflected in Otago University's ITS student survey. Since the trend indicates that internet-capable mobile devices are likely to be ubiquitous within 3-6 years, it is timely to investigate how they may be used for educational purposes in a pedagogically appropriate way. This project developed a software platform to support mobile-learning by extending UniTube with the ability to accept media uploads via multi-media messages (MMS) from phones. More importantly, the project investigated the usage of mobile phones in tertiary learning. A key finding is that much of the work in mobile learning uses "artificial" settings in which students are provided with cutting-edge devices, and learning tasks are designed to be suitable for, or to require, the use of devices. However, in our work, and in other work which adopted a "naturalistic" and sustainable setting in which tasks are not designed to showcase mobile learning, and in which students are free to use any technology they choose, the level of usage of mobile devices is quite low. Finally, we would like to thank our colleagues at HEDC for their contribution.

INNOVATION IN TEACHING

Associate Professor Sue Court

Computer Assisted Flexible Learning in MUSI 191

The paper MUSI191, "Introduction to Music", serves the purpose primarily of providing the basic knowledge of music theory for students with little or no prior knowledge who intend to proceed to the core theoretical papers of a music degree. For this reason it is very intensive, and students can fall off the rails easily if they miss a few key concepts and/or a number of lectures. With the objective of allowing a more seamless learning experience within the normal lecture-tutorial structure, we worked with a recent graduate of Music to develop interactive online music exercises. These provided immediate and continuous feedback for the students. With the addition of assessed Blackboard quizzes and podcast lectures, students were able to revise more effectively and were able to strengthen weak areas, while teaching staff were able to intervene where needed. Two measuring tools were employed to test the effectiveness of these methods which were introduced: (i) a questionnaire was given to students on three occasions to measure change in perception of ability in relation to actual results; (ii) in an attempt to measure the effectiveness of MUSI191 as the preparation for the first core technical paper, MUSI101, results of continuing students were measured over three years.

Results:

- Blackboard quizzes used in the first six weeks to provide early feedback on the initial concepts had the advantage of being readily accessible to students, but the numerous inconsistencies of Blackboard, combined with incompatibilities with students' browsers proved to be a mixed blessing. Student frustration outweighed advantages in too many cases.
- The practice of podcasting lectures was very beneficial. Our initial fear that students might choose to watch or listen to podcasts of lectures rather than attend them, was unfounded. Students did report in questionnaires, and anecdotally, that they found the use of podcast lectures (both aural and audiovisual) to be useful for revision and study, but how vital it was to actual results is uncertain.
- The immediate feedback available through interactive computer exercises was well received and made a positive difference to results overall. Although this was not the aim, it would be possible now with the resources developed through the CALT grant and previously, to offer this paper online.
- MUSI191 prepares students well for the core technical paper MUSI101 only if they received high grades (B or A) in the former paper. Those students who received a C pass in MUSI191 predominantly failed MUSI101.
- At the outset, most students in MUSI191 did not have an accurate assessment of their knowledge of music theory: typically the able students underestimated themselves and the students unable to read music over-estimated their ability. By the end of the course (but prior to the final exam) their perception related more directly to the results they had been receiving. Both the A level (final grade) and B level students developed a lower perception of their ability at the middle of the course, but before the final examination had improved their self-perception markedly. An opposite pattern was reflected by the C students: They indicated higher confidence in the middle of the course, but before the final exam, had a lower self-assessment overall than they had at the outset.

Professor Stephen Duffull

Development of simulation software to enhance learning of the clotting cascade

Coagulation is an important process in haemostasis. It involves a complex interaction of clotting enzymes and proteins. Warfarin, a widely used anticoagulant, is a difficult drug to dose due to the large variability in requirements between patients and a narrow therapeutic range. Recently, we published a computer model of coagulation that can be used to simulate the effect of various drugs on coagulation.

This CALT grant enabled us to employ a computer programmer to write a graphic interface for the computer model.

The interface was used by a final year pharmacy class to explore warfarin dosing. Students' interactions during the workshop were documented. Following the workshop, a focus group (20 students) was conducted and discussions were recorded and transcribed.

Several themes emerged from the students' interactions and interviews including: the simulations helped students visualise changes in coagulation so as to understand the time course of effects of warfarin; the students valued the ability to predict outcomes as an active learning activity; and the students would value interrogating the software at their own time.

Associate Professor Leigh Hale

Innovation in rehabilitation: development of a student driven educational website for people with chronic conditions

The aim of this study was to enable final year physiotherapy students to learn to develop websites to support the patient population groups that they work with; technical skills that we expect they will use in their future professional careers. Two websites were developed and evaluated via qualitatively-based research projects undertaken by two final year student groups; one for the School of Physiotherapy Multiple Sclerosis clinic and one for the School of Physiotherapy diabetes exercise classes. Both the clinic and the classes are used as clinical teaching placements for physiotherapy students. The developed websites are now in use to support students attending these clinical placements. Furthermore the websites also support the patients attending the clinic and the classes. It is envisaged that students in these placements will continually upgrade and add to the websites thus perpetuating the technology skill learning of future students. In addition a third final year student research project was undertaken to evaluate the learning of the students who developed the websites.

UNIVERSITY TEACHING DEVELOPMENT

Professor Barbara Brookes

Seeking Sources: Effective Research

'Forensic Histories: Effective Research' is a first-year paper designed to hone students' research skill. Unlike other first year papers that are usually content-based, this paper is skill-based. Students are asked 'what do we know, how do we know it, what can we prove' and this provides the basis for the analysis of sources. Key questions are why was this source (e.g. the census) created? What does it reflect about the nation? How has it changed over time? In what ways is it reliable and how might it be flawed? Students were exposed to a range of sources from across different time periods and asked to think about how the growing role of the state since the nineteenth century has created a whole raft of different sources about the lives of individuals which can reveal population trends. These include, for example, visual sources, such as the use of photography for 'mug shots' as a way of tracking criminals. We also discussed the range and quality of secondary sources, enhancing their ability to discriminate between an article in Nature, for example, from one in People Magazine. The course provided an opportunity to introduce students to the wide range of primary sources now available through digital databases such as The Old Bailey OnLine.

Ms Gaynor Corkery

Exploring service learning as a means to promoting an ethos of community involvement among pre-service teachers

What began as a well-intentioned addition to a teacher education programme – the requirement that every student complete a minimum of 15 hours community service in a project of their own choice over the course of the year – developed into an interesting analysis of the benefit of service learning to student teachers and to the beneficiaries for whom they worked. Within this single-year graduate programme, students found the time to be buddies to at-risk youngsters; coach for Special Olympics or sports clubs; tutor for NCEA; organise youth groups or holiday programmes; design free online programmes for teenagers, or run workshops for an art gallery etc. This qualitative research study revealed the obstacles, frustrations and benefits for the participants. Most of the student teachers claimed in their evaluations and focus group sessions, that the service reinforced their teaching skills; afforded them an insight into, and appreciation of the wider community; and in some cases provided them with a transformative experience. The beneficiaries surveyed and interviewed, appreciated the voluntary assistance, and believed that it gave them the opportunity to up-skill and enlighten teachers of the future, and to enrich some as individuals. The findings of this study will inform the design of teacher education programmes and contribute to the international discourse on service learning.

Dr Kristin Kenrick

Phoning a senior colleague: how do medical students in simulated clinics utilise this resource?

This project involved digitally recording telephone conversations which medical students had with senior GP colleagues, when they were participating in simulated clinics in 2010. These clinics are a core component of our teaching, and take place during the GP and Rural Health attachments which medical students do during their fourth and fifth years of training. They focus on enabling students to achieve safe and effective clinical outcomes (SECO) for the patients they see, and consulting with a

senior colleague is one of the tools available to them to help them do this.

We have recorded approximately 350 interactions between students and GPs and are currently looking at samples of these to determine how students can best utilise this resource to ensure that they achieve the desired outcomes for their patients. We are also using transcripts of these conversations to examine if and how clinical reasoning evolves between students' fourth and fifth years, and how we as teachers might be able to enhance this process through the way in which we guide students through these phone consultations.

Dr Helen Moriarty

Teaching empathy with motivational interviewing and brief intervention counselling skills

The Empathy Project is a prospective longitudinal cohort study of the teaching and learning of skills of clinical empathy.

Empathy was identified as a teaching and learning gap, being a topic previously taught largely on the "hidden curriculum". The Empathy Project began with two successful CALT grants (a Research into University Teaching grant in 2009 and a University Teaching Development grant in 2010). This report covers the 2010 grant activity, however The Empathy Project has since developed a life of its own, raising further educational questions over time. To date, this project has focussed on teaching of, and learning by, undergraduate medical students. Proposed future project extensions will carry this research into postgraduate applications and into interdisciplinary health professional teaching and learning of this fundamental skill for clinical communication success. The Empathy Project itself has been very successful to date; the results have attracted wide attention, and potential international collaborators. The team has just succeeded in getting its first peer review paper accepted for publication in an international journal and other papers are in the pipeline.

The team is very grateful to CALT for enabling the initial resourcing of The Empathy Project.

Associate Professor Wendy Parkins

The reading habits of English students at the University of Otago

This project sought to examine the reading habits of students studying English literature and to determine whether methods and assumptions concerning reading are changing as a result of the impact of new technologies (such as social networking, texting, etc). Through a series of surveys that generated both qualitative and quantitative data, this project revealed that new technologies play a role in the mode of reading with implications for the quality of attention students devote to study-related reading. This project hypothesised that new forms of assessment and teaching delivery may help to address the potential problems of diffuse attention and shorter reading duration. While some educators are drawing on new technologies to address this problem, this project was interested to explore if 'non-digital' solutions could also be found. Specifically, this project trialled an assessment innovation in the form of a creative-writing exercise, designed to foster a greater degree of self-

awareness and self-reflection on the part of students, concerning how they read literary texts. In the scholarly article arising from this project, the authors further suggest that a greater attention to the affective experience of reading could also provide a valuable means for teachers to address the changing culture of reading in the twenty-first-century classroom.

Dr David Warren

Are we preparing our graduates to be ambassadors for Chemistry?

This project studied the effectiveness of departmental outreach activities in developing graduate attributes and preparing students to be effective ambassadors for chemistry. In the chemistry department we have developed a program involving our students in the delivery of chemistry lessons to (mainly) primary and intermediate school children. This service has obvious benefits to the schools but we have found there are many benefits to the students involved, including the development of communication skills and a sense of community responsibility, graduate attributes that are also recognised as hallmarks of an effective ambassador. Students develop additional skills in areas such as time and workload management that reflect their commitment to the activities. The students' effectiveness as ambassadors is seen in our long term involvement with schools (some in their third year now) as well as the relationships they develop with classes, who frequently call them 'our scientists'. For me this was summed up when a teacher was told "they're just normal people doing something they enjoy". There have also been unexpected benefits for the department, including the development of a mentoring system as well as a pride and strong belief in the department's ethos that spreads beyond the outreach team.

Mrs Tangiwai Rewi

The impact of contextualising learning on student understanding of the Māori language curriculum in Te Tumu

Due to existing PhD research commitments, time was my worst enemy in undertaking this valuable CALT Teaching Development Grant allowing me to examine the benefits of including local content (originally flora, fauna, geography related) into the Māori curriculum within Te Tumu.

The feedback from the participating 100-300 level students was very positive about the introduction of local content which included visits to Port Chalmers to identify local landmarks and landscape features, the bird aviary to distinguish colours beyond the primaries, a visit and activities at Otakou marae and a visit to a local Māori artwork artist and a local business that sells the artwork. Looking to ongoing outcomes, this project reminds me that there is always room to improve our teaching content and vary our teaching pedagogies. For reflections on the 200 level paper experiences click on this link: <http://hedc.otago.ac.nz/magnolia/spotlight/Presentations/Session-4/125.html>. Many thanks to CALT for the opportunity and I look forward to further expansion on the ideas explored to date.

An article resulting from this research, published in [He Pukenga Kōrero, Volume 11, Number 1, 2012](#),