

**Spotlight on Teaching at Otago:
Sharing innovation, best practice and research**

**Monday November 13, 2006
St David Lecture Theatre Complex**

**Sponsored jointly by the Research Committee and
the Higher Education Development Centre**

This document contains the Colloquium abstracts listed alphabetically by type of session:

- plenary (p2)
- oral presentations (p3)
- workshops (p21)
- posters (p25).

A hardcopy of these will be available for Colloquium participants.

We hope that staff will enjoy the day, which offers three parallel sessions consisting of two paper sessions and one workshop session. The day will conclude with a poster wine and nibbles session on the mezzanine floor of the St David complex.

Thanks are due to:

- the Research Committee for funding this event
- HEDC for sponsoring the poster session
- Professors Gareth Jones, Geoff White and Kerry Shephard for their advice and support
- the Advisory Group for this Colloquium, consisting of:
 - Prof Tony Binns (Geography)
 - Prof Gerry Carrington (Physics)
 - Prof Brendan Gray (Marketing)
 - Prof Helen Nicholson (Anatomy and Structural Biology)
 - Drs Carol Bond and Sarah Stein (HEDC)

Dr Rachel Spronken-Smith
Colloquium Convenor
HEDC

Abstract: Plenary

Research-informed Teaching

D Gareth Jones, Deputy Vice-Chancellor (Academic and International)

In some quarters there is a general assumption that the meaning of the term ‘research-informed teaching’ is self-evident. This is especially the case in research-intensive universities, where it is frequently taken to encompass “teaching undertaken for the most part by active researchers, and which is closely informed by current research knowledge and scholarship”. This is the definition used in the University of Otago’s strategic imperative, ‘Achieving excellence in research-informed teaching’. However, it became evident to that particular imperative’s working group that the notion is far broader than that indicated by this definition alone. Accordingly, the group adopted the term ‘research-teaching link’, considering it to be a preferable one, encompassing as it does teaching and learning from research, about research and also through research. Against this background the group sought to outline the manner in which the research-teaching link is relevant to enhancing the learning experience of research-based postgraduate students, and to attracting and catering for an increased proportion of top calibre students. Emphasis upon the research-teaching link also led the group to critique the widely promulgated concept of internationalisation of the curriculum. The result was its reformulation into ‘enhancing the international standing and aspirations of the University in relation to the research-teaching link’. The work of this group demonstrates the importance of being prepared to question and reassess simplistic interpretations of research-informed teaching. What is now required is a thorough examination of the way in which students and teachers are made aware of the research-teaching link, curricula display it, and the University at all levels supports it.

Abstracts: Oral Presentations

Epiphany and Evolution: The Evolution of a Health Informatics Course

Dr David Abernethy, Rachel Esson and Mary Newman,
(Wellington School of Medicine and Health Sciences)

This paper describes the evolution of a Health Informatics course for 4th year medical students at the Wellington School of Medicine and Health Sciences in which students learned informatics skills through self-directed modules and group projects. We were challenged by students' lack of engagement in the course and lack of understanding of HI.

We report on how developing our own understanding of teaching and learning influenced changes in our teaching practice and delivery of the course. Since the course began in 1999 the following changes have been made:

1. making the course more student-centred by changing from a largely online delivery to more face-to-face
2. providing opportunities for students to come to an understanding of the relevance of informatics in their medical practice
3. developing links with other teaching departments
4. aligning the aims and objectives of the course with course delivery

Effecting change in our teaching practice required reflection on our own understanding of teaching and learning which we gained from completing the Postgraduate Certificate of Tertiary Teaching. We also redeveloped the course aims and objectives as drivers for our teaching.

This is work-in-progress. 2007 will bring new challenges as curriculum changes mean the course will now be integrated into a clinical module instead of being a stand-alone course.

Critical Learning and Tape Recorded Journals: An Exploratory Study

Robert Aitken and Lynley Deaker (Marketing)

This exploratory study looks at how the use of tape-recorded journals can help to create the right conditions for reflective learning to take place. The advantages of using voice recorders are discussed and a number of themes are identified that contribute to the development of autonomous learning and critical thinking. These include immediacy, creativity, sincerity, effective communication and, most importantly, thinking and talking. Students enjoyed the experience of taking control of their own learning and provided a number of insights into their own learning strategies. The paper concludes with a recommendation that educationalists consider using tape recorders to encourage the kind of reflection and critical thinking that are essential to life-long learners.

Digital Technologies in Language Learning

Antonie Alm (Languages & Cultures)

In this presentation I want to describe a project that I have conducted with a second year German language class. Digital technologies have significantly enhanced the opportunities for creating interesting and meaningful language learning environments. The access to German language materials and the possibility to connect authentic, didactic and learner-produced materials opens the door to new ways of teaching and learning.

Access to German television through an online TV recorder has triggered a learning unit on German television and a consequent project on soap operas. A popular German soap opera was chosen for viewing and discussion. Soap operas are accessible because of their predictable plot, however, their focus on dialogue mean that they are linguistically relevant for language learners (e.g. choice of register, colloquialism, sayings). The class then created a new soap opera. Each student took on a character and was assigned to be part of three scenes (a few reluctant students were given the choice of dying early and transcribing scenes from the original TV series instead). As an organising tool a space on wikispaces was created. Students submitted information about their character and later published their dialogues. This turned out to be a valuable tool as the dialogues could be edited and reviewed throughout the two-week writing period. Students then started filming and editing their movie on iMovie. The movie was submitted to YouTube and published on the wikispaces site.

I believe that learners were given a good source of comprehensible input (original soap operas), they felt part of a learning community (good contact to class mates during script writing, filming and editing process) and the publication of the project has given them a sense of agency.

The Extinction of BIOL111 at Otago – Perspectives on a Selection of Large First Year Biology Classes from Around the Globe.

Phil Bishop (Zoology)

Many things in tertiary education stand in isolation and an established course can often fall into the routine of continuing along exactly the same lines as it has done in the past. While this may not necessarily be a bad thing it can result in a course that is stale, flat and uninspiring for the most important cohort of the university population – first year students. It is also relatively easy for lecturers dealing with large first year classes to simply put their heads down and get on with it, rather than trying to find novel ways of making it more exciting and interesting.

The University of Otago prides itself on quality teaching, but how do we know that the first year Biology courses at Otago are really as good as we think they are? Although the content of the courses is regularly updated, it is difficult to determine whether our teaching methods, our assessment procedures, and our standards are out of date or even in line with those of other top institutions overseas.

I visited seven leading overseas universities that teach large first year biology classes with the aim of sharing ideas about ways to teach a practical and ever increasing subject like biology to such large numbers. In this presentation I highlight some areas of concern and present insights into the teaching and administration of large first year courses.

Mindset and Tools

Thomas Bley (Design)

Design is a process through which we identify challenges and opportunities, propose and articulate solutions, visualise possible scenarios and shape the world around us. Design is invisible thus ideas are our tools. The goal of Design Studies is to ensure that design activity is based on thorough research, and a sound knowledge base, as well as intuition and a strategic mindset. As part of an interdisciplinary research environment, design utilises unique conceptual and reflective methods to deliver innovative solutions. It is relevant to all academic areas, whether in the sciences or the humanities, technology or business. The Design Studies programme enables students to develop and pursue individual career goals, taking account of the diversity within the profession. In the first part of this session the development and implementation of the new curriculum in Design Studies will be discussed.

In the second part of the session a research tool - the 'manifesto machine' - for a new and fast evolving discipline (design) will be discussed. As design is evolving into a serious discipline in its own right, it will be essential to establish a theoretical back bone - or spinal cord - which will help to create a common basis to support a sound discourse. This will be important in particular since design will be THE discipline bridging between specialist areas and being trusted to oversee the development and innovation process from A - like analysis - to Z - like zest. To help in achieving this goal, the Department of Design Studies has put a team into place, which has created a 'machine', which will serve as a coordinative tool. It is a web based portal collecting and presenting everything written, said, created or visualised within or about design. This will be an open platform presenting relevant material to be available to be examined. This machine by itself will not create any theory, but by collecting content and linking historical statements it will serve researchers as a most valuable tool in their endeavours to connect the pieces and to create correlation for a better understanding of the values and impacts of design.

Sustainable Design Education

Nicola Bould (Design Studies)

As Heskett states designers can provide new solutions to complex problems:

“Some individuals evolve insights into people’s lives, with the results that they design radically new solutions to problems that might seem obvious once manifested in tangible form - in other words, giving users what they never knew they wanted - one of the most innovative roles designers can play.” (Heskett, 2002)

However, little regard is been given to the consequences of giving people what they never

knew they wanted, of producing ‘super’ materials or creating throw-away societies. The word ‘sustainable’ in product design is misused and tagged onto products as an afterthought. Yet credible research shows expanding land-fills, depleting oil reserves and massive changes to our environment which necessitates responsible design to ensure the future for our planet.

Since March 2006 this sustainable philosophy has created an educational tool and realistic project for product design students at the University of Otago. Students have been given the task of designing a clean, green university. They have studied their fellow students, interviewed staff members and challenged cleaners. They have rummaged through bins, visited recycling centres, understood the problems of recycling and the quantity of waste generated and investigated into energy, paper and water consumption.

This could be just one small step for the university. The biggest impact, however, has been on the students. They have understood the impact of their lives, of over-consumption and irresponsible design. Hopefully they will graduate Design Studies to become designers who care about their world.

Heskett, J. (2002). *Toothpicks and Logos: Design in Everyday Life*. UK: Oxford University Press.

Feed Them and They will Come: Nourishing the Teacher – Peer Tutor – Student Learning Chain

Donna Buckingham (Faculty of Law)

LAWS 101 is the LLB foundation course and can also form part of any degree. It attracts nearly 600 students and consists of three modules over two semesters: statutory interpretation, case analysis and legal history. Entry to second year law is restricted to 200 places. LAWS 101 is therefore a stressful environment in which to internalise these foundation clinical skills and appreciate the heritage of our legal system.

Students have three formal lectures weekly, supplemented by a tutorial programme that is largely staffed by honours and other senior law students. Its underlying ethic is to mitigate the limitations of large formal classes and this peer-based formative learning context has come to be highly valued – both as an academic and a pastoral support link.

The programme provides iterations of oral submission skills and the submission of closely assessed formal legal writing. Anecdotally, excellent tutoring may well provide the extra impetus and skills base for successful entry to the full LLB programme. In addition, students consider the programme valuable for its contribution to the general skills of oral and written presentation and the resulting enrichment of their non-law study.

For the programme to succeed, a close relationship with the tutors has to be established, taking into account their twin status as teaching colleagues and as students still completing their own degrees. The presentation describes the programme and management of this collegial/pedagogical relationship.

Consideration of Teaching Approaches used in Practical Papers of the Physical Education Degree

Chris Button (School of Physical Education)

A number of different teaching styles exist which can be adopted by movement practitioners to provide students with a supportive learning environment. The aim of this study was to monitor and identify the range of teaching styles employed by tutors of the Practicals papers of the School of Physical Education, University of Otago. A sample of tutors and students gave their perceptions of teaching styles through a modified questionnaire administered at the conclusion of 9 different Practicals papers (e.g., Advanced Resistance Training, Adventure Based Learning, Agility-Speed-Power, Badminton, Bushcraft & Survival, Endurance, Jiu-Jitsu, Snowshoe & Winter Camping, Volleyball). It was found that tutors most commonly employed teaching styles at the Command (or 'reproductive') end of the teaching styles spectrum although Discovery ('productive') styles were also used, but less frequently. A broader range of teaching styles were typically employed in outdoor activity papers (compared to sport-based or athletic training papers) in which tutors and students spend more time engaged in less structured, informal learning activities. It is encouraging that students who may go on to become movement practitioners in the future are exposed to a wide range of pedagogical approaches during their training at the School of Physical Education.

Bridging Mathematics for Clothing and Textile Sciences

Debra Carr (Clothing and Textile Science)
and John Shanks (Mathematics and Statistics)

An appreciation of mathematics and statistics is vital in tertiary science and engineering subjects, however, there is an acknowledged worldwide decline in the mathematics ability of engineering and science students when they commence tertiary education. In this project, an on-line intervention (*Mathercize*, Department of Mathematics and Statistics) was developed for Clothing and Textile Science (CLTE) students. As *Mathercize* is available on-line it is removed from peer-knowledge of completion. The CLTE intervention contains sets of questions divided into topics (e.g. basic mathematics, metrics, quoting numbers, proportions, statistics, self-test) and problems are hidden within a framework that is focused on the Department.

Development and Delivery of a New Course in Epidemiology for Health Science First Year (HSFY) Students.

John Dockerty (Preventive & Social Medicine)

In 2001 we began planning a challenge: to give HSFY students a brand new course in epidemiology. In 2005, we delivered it for the first time, in first semester, to a class of 1171. It was well received, and we learned a great deal about what worked, and what didn't. We also gained an understanding of how these students differed from others we had taught in the past. We changed to second semester teaching of the course in 2006, and this was beneficial for this applied subject.

Learning outcomes are relevant and linked to assessments. Learning methods include lectures, tutorials, readings, exercises, electronic material and a face-to-face helpdesk. There is something for everyone in the content, which must cater for students hoping for careers in medicine, dentistry, pharmacy, and physiotherapy, as well as those going on to other degrees. Lectures include core teaching and special illustrative 'hot topics'. Clinical examples are injected throughout, to capture interest and give students a taste of what is to come later in their careers.

At the end of 2005, we evaluated the views of students and staff. Changes to some content were made on the basis of suggestions. Formative exercises were introduced, and helpdesk and administrative procedures were streamlined. These changes seem to have paid off in 2006, with better performance of students, and positive feedback.

This presentation will give examples of some of the course material presented, describe the ups and downs, and reflect on the lessons learned along the way.

Small Groups in a Large Group Setting

Lyn Dowsett (Biochemistry)

With the advent of large groups of first year students in Biochemistry in 1998, the laboratory areas were changed to a format which has lent itself to a follow-on change. Practical classes have always been on the large size but the change to seated students at table-height benches has given a small-group dimension the teaching. Each class has a maximum of sixteen students per demonstrator with one academic staff in overall charge. Students have become more visible and there is greater interaction with each small group within the large group setting. This has carried over into our second year courses where we try to keep the student:demonstrator ratio at 12:1. In this paper I describe the changes that have occurred and how they have been managed.

“Now That I Have Your Attention” – The Joys of Teaching Chemistry to First Year Health Science Students.

Lyall Hanton (Chemistry)

Is lecturing an appropriate teaching method for large classes? Does it meet the students learning needs? Large class lecturing is questioned by educationalists and indeed some teachers as an effective means of teaching students. However, at the coal face the practicalities of teaching a course with more than 1500 students mean that large class lecturing remains a necessity at many universities. I fervently believe large class teaching can be carried out in such a way as to make it an effective tool for student learning. I will provide my views and philosophy of large class teaching based on my 25 years of experience of teaching Chemistry to first year Health Science students. I hope to offer pragmatism, some advice and a few tricks of the trade.

Statistics Training to Support Research Students at University and to Prepare them for their Future Employment.

John Harraway (Mathematics and Statistics)

Statistics is a prerequisite for many subjects at University that involve research methodology and data analysis. Many students fail initially to appreciate the relevance of statistics. It is important to select topics to be taught carefully and teach these in context to help motivate students. Two CALT grants have been awarded to investigate the issues.

The first grant was used to assess statistics use in the workplace by research degree graduates two years after graduating. A postal survey was conducted regarding statistical techniques, research methods and software used in the workplace by 913 graduates with PhD and Masters degrees in the biological sciences, psychology, business, economics, and statistics from six of the New Zealand Universities. The study identified gaps between topics and techniques learned at university and those used in the workplace, and pointed to deficiencies in statistical preparation for employment. Courses requested include multivariate statistics, generalized linear models, research design and power analysis taught with minimal emphasis on probability and mathematics. Recommendations are presented, such as expanding statistical service courses to eliminate gaps, the development of intensive workshops for postgraduate students and for workplace retraining, or involving staff from other departments to provide context for statistics teaching.

The second grant is being used to investigate the adequacy of statistical support available at Otago. About 400 theses from the last five years have been read and the authors surveyed independently. Procedures used in different subject areas are being summarised along with student opinion of statistics support.

Can We Be Lecturers Without Lecturing?

Janine Hayward and Chris Rudd (Political Studies)

In 2004 we introduced a new paper, *Political Communications in New Zealand*. With the help of a CALT grant, the paper aimed to shift students away from passively attending lectures (and then cramming required readings before exams), to engaging with readings and completing short assignments *before* attending tutorials. We knew that in theory this method encouraged deeper 'lifelong learning' and wanted to see for ourselves if this was true. We abandoned lectures completely and instead used Blackboard to ask specific questions, set exercises and assignment, and give readings. The course is 100 percent internally assessed, through learning logs, essays and a mid-semester test.

Our presentation will explain more about how the paper works, and will discuss the outcomes of the paper in terms of student participation, academic achievements and student feedback to surveys about the course.

Strengthening Teaching and Research Links – Teaching through Inquiry in Physical Geography

Mike Hilton (Geography) and Rachel Spronken-Smith (HEDC)

This session will describe a full-year physical geography research methods course for third year students entailing group-based inquiry into research topics closely aligned with staff interests. Up to 60 students enrol so about 10 groups are formed, with staff typically supervising one or two groups. The course outcomes include the ability to design, conduct and report on a research project, effective communication, teamwork skills, organisational and project management skills. Weekly group meetings are held with a tutor, together with 12 seminars covering aspects of the research process and development of skills (e.g. oral presentations, report writing). The research involves collection of field data and students take a lead role in organising the fieldtrips (ranging from a weekend to five days in the field). Assessment consists of individual elements (80%; literature critique, a report based on group work, and an individual critique on their learning) and group work (20%; research proposal presentation, ‘conference’ presentation, and a self-and peer-assessment of contribution to the group). Feedback from staff and students on the value of the course are generally very favourable.

How Can I Help You? Enhancing Physiotherapy Musculoskeletal Clinical Education In A Hospital Setting.

Gillian Johnson (Physiotherapy)

The purpose of this presentation is to highlight different teaching strategies designed to enhance the learning experience of third year Physiotherapy students in a ward situation at Dunedin Public Hospital and their perception of the respective tasks. Research indicates that there is little difference in performance in students exposed to hospital- and community-based settings (Satran et al., 1993) and yet these clinical placements are quite different in terms of the demands, expectations and learning experiences. In the hospital setting students are confronted with many learning challenges: deficiencies in knowledge, difficulty in organising knowledge and the need to transfer practical skills learnt in the classroom to patients presenting with serious and often multi-factorial conditions. The hospital-based clinical module under discussion was of three weeks duration with four Physiotherapy students in each rotation. In addition to the usual patient assessment, treatment and reflective sessions a variety of teaching approaches were incorporated into this clinical module. Teaching strategies included the identification of themes, patient interviews, masterclass presentations on selected topics, a discussion forum with the ward physiotherapist and structured student observation sessions. As part of the clinical evaluation of the placement students were asked to verbally rank their opinion of these different teaching exercises. Feedback from the students indicate that the opportunity to think for themselves, to gain confidence and to see qualified physiotherapists in the working situation, and not necessarily patient encounter, remain at the forefront of their learning experience in the hospital setting. For the less confident students, structured learning tasks were rated highly.

Satran, L. Harris, I.B., Allen, S., Anderson, D.C., Polland, G.A., Miller, W.L., (1993). Hospital-based versus community-based clinical education: Comparing performances and course evaluations of second-year pediatric placements. *Academic Medicine* **68**: 380-2.

Online Teaching: Teaching Presence, Social Presence, and Cognitive Presence

Kwok-Wing Lai and Keryn Pratt (Faculty of Education)

The development of learning and pedagogical theories in the last few decades, coupled with the advent of information and communication technologies, has changed our understanding of the nature of teaching as well as the role of the teacher in tertiary and distance education. Increasingly in distance education, in particular, with the support of computer-mediated communication, the teacher is being perceived as a facilitator, and his/her role is to enable learners' meaning making and construction of knowledge, rather than a content expert, with the traditional role of transmitting knowledge. Should teachers be conceptualised as facilitators or moderators in the distance education context? Using Garrison's Community of Inquiry model, the characteristics of effective online teaching are explored in this presentation.

Using Media to Enhance Experiential Learning of Negotiation

Ian McAndrew (Management)

There is a wide consensus among teachers of negotiation that experiential learning, principally through role plays or simulations, is the central component of an effective programme of instruction in negotiation skills. Equally, it is accepted in experiential education circles that much of the learning value of simulation is in making provision for adequate reflection on the experience.

MANT 343 Negotiation and Dispute Resolution is constructed around a series of increasingly complex skill-building exercises leading to a demanding negotiation simulation exercise (*Ponderosa County*) that occupies four weeks of the semester. The first experimentation with media enhancement of learning in the course was the introduction of videotaped "documentary interviews" as a vehicle for contemporaneous reflection and post-experience debriefing (McAndrew & Phillips, 2005).

An integrated, experiential learning package has now been further enhanced by the production, enabled by a CALT grant, of an instructional DVD simulating the *Ponderosa County* exercise. The DVD, timed for use over the full semester, provides instruction in negotiation technique, a vehicle for comparative reflection, and the opportunity for students to react to alternative scenarios in a familiar setting.

McAndrew, I. and Phillips, V. (2005) Documenting play: using videotaped interviews to debrief collective bargaining games. *Human Resource Management Review* 15(3): 214-225.

Closing the Loop or Creating More Tangles?

Angela McLean (Anatomy and Structural Biology)

Particular to the discipline of Human Anatomy at the University of Otago is the “circuit test” or “rat race” form of assessment, a time-restricted station-based mix of theoretical and practical questions.

Much time is spent in the preparation, outlay, invigilation, marking and administration of these assessments, not to mention the effort invested by the students as they prepare for these summative contributions towards their final mark. But of all the time spent in the production of these assessments, very little time is spent generating meaningful feedback with the students.

The notion of feedback is central to student-centred learning (Biggs, 1999), to good practice in promoting learning (Sadler, 1998), to empowering self-regulation in learners (Nicol and MacFarlane-Dick, 2006) and to providing opportunities for review and reflection by learners and teachers alike (Nicol and MacFarlane-Dick, 2006). Our very own graduates bemoan the lack of feedback in the BSc years as a distinctive, lasting impression of their time in the discipline (Otago University Graduate Survey, 2005).

So, what happens when a class is offered feedback following a “rat race”? How does the session eventuate, what do the students think of it and how do they think it could be improved? This presentation outlines the above and the challenges surrounding generating meaningful feedback on a large scale.

Biggs, J. (1999) *Teaching for quality learning at university*. Buckingham: SRHE.

Nicol, D. J. and MacFarlane-Dick, D. (2006) Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education*, **31**(2): 199-218.

Sadler, D.R. (1998) Formative assessment: revisiting the territory. *Assessment in Education: Principles, Policies and Practice*, **5**(1): 77-84.

Te Whanake Online – An Interactive Resource for Māori Language Learning

Jenny McDonald (HEDC), John Moorfield and Tania Ka'ai (Te Tumu, School of Māori, Pacific and Indigenous Studies)

The goal of the *Te Whanake Online* project is to develop a series of online interactive modules to complement an established Māori language learning set of texts and related resources called *Te Whanake*. These are used throughout Aotearoa/New Zealand in tertiary institutions. *Te Whanake Online* supports an immersion or game-style approach to language learning. The project means that Māori language learners will have access to an online resource which is at the forefront of current thinking and practice in language learning online and firmly grounded in a successful and well-established Māori language series of texts, study guides, audio-visual resources, a dictionary-index, and teachers' manuals.

Some Options for Improving Students' Exam-Taking Technique

Selene Mize (Law)

Students often lack confidence in their exam-taking skills, and, unfortunately, rightly so. In addition to substantive mistakes demonstrating poor understanding of the examined course, I have observed students (including final year students) making technical and stylistic mistakes in writing a good examination answer which frequently cost them a significant number of marks. For example, some students fear to state the obvious when it is an important part of demonstrating understanding of the topic. Others do not reach interim conclusions, or fail to follow through with analysis at critical points.

Factors which contribute to this situation include: insufficient clarity in the lecturer's instructions (for example, will the grammar in an essay be marked as well as its substance?); a lack of opportunity for feedback on exam technique given the usual format of a single lengthy examination after lectures finish; and an inability to learn by way of modelling because students do not see the examination scripts of other students.

I will report on several options for attempting to improve student exam technique which I have trialled. These include compulsory midterms with written feedback on exam technique; pre-exam handouts containing lists of common mistakes made by students and sample answers; and handouts analysing anonymous student answers at various marking levels following an examination. All of these require some time to implement, but are not as time-consuming as seeing students individually following the examination.

Threads: When Course Material is Not Stand-alone.

Helen Moriarty (Primary Care and GP, WSMHS)

Medical degree courses teach a complex body of knowledge with topics that converge, overlap and diverge. Medical students do not have stand-alone papers to pass and move on from, but progress through a spiralling curriculum, revisiting and adding to prior learning. Components core to all topics act as intrinsic Threads: practical ethics; health professionalism; evidence-based medicine/clinical reasoning. Other Threads topics link into every discipline: clinical pharmacology; health informatics; drug and alcohol. Threads have one common feature: no “single best time” to teach them amongst all the topics in 6 years, posing particular curriculum integration challenges. This paper will discuss teaching approaches to two Threads topics from personal experience at WSMHS: alcohol and other drug (AOD) and applied evidence-based medicine/clinical reasoning (CDM).

In 2003 a CALT grant was obtained to develop an interdisciplinary, interschool AOD learning resource on Blackboard. The BB paper, innovative for its time, gave students across three geographically-dispersed clinical schools access to uniform information and self directed learning modules. All medical students (yr 2-6) had full paper access as the opportunistic nature of clinical experience makes optimal timing on a “need to know” basis quite unpredictable. The advantages, disadvantages of this approach, and future direction will be discussed.

In 2004 the Evidence-based Medicine course was inherited from its instigator and longstanding convenor. A perennially unpopular course, it was intensively overhauled: revised course content was integrated into clinical modules and CDM was born. Reward followed with improved student evaluation, but we cannot end with that success.

Students' and Supervisors' Perspectives on Postgraduate Research Supervision

Tamar Murachver and Anna Janssen (Psychology)

Structured interviews were conducted with a cross-section of PhD students and PhD supervisors from the University of Otago. Students and supervisors were asked about the qualities they believed were important in a supervisor, and what they perceived to be the obstacles that arise during PhD supervision. They also described their perception of a good PhD student and supervisor relationship. Although there were many similarities between student and supervisor responses, there were a number of areas with the perspectives differed. This talk focuses on those differences and how they might be prevented or dealt with within the student-supervisor relationship. Students often perceived supervisors are being overly concerned with publications and their own reputation, whereas supervisors were less likely to mention this. Instead, supervisors spoke about concern for students' future careers. Supervisors often mentioned concerns about students' motivation and commitment, and also expressed concern about students' poor writing skills. Many students expected their supervisors to be experts in the student's chosen topic of study, which some supervisors felt was unrealistic. Some of the discrepancies between student and supervisor perceptions stem, in part, from lack of more direct communication about expectations during the supervisory process, as well as a misunderstanding of the roles and constraints placed on one another. As an example, only supervisors mentioned funding as an obstacle encountered in PhD supervision, or the concern with maintaining a positive relationship with their students while having to provide critique and criticism.

Learning about Health-related Behaviour Change Through Personal Experience

Pauline Norris and James Green (School of Pharmacy)

This paper describes an assignment where third year pharmacy students attempt to improve their own health-related behaviour, in order to learn about the process of behaviour change. Students identified an aspect of their own health-related behaviour that they were not happy with, such as eating or sleeping patterns, or smoking. They chose a goal they wished to achieve in the eight weeks of the assignment, such as stopping or reducing smoking, or eating two pieces of fruit a day. The students developed a plan for their behaviour change, monitored their own progress over eight weeks, and then reflected on the process, using models of behaviour change (including the Health Belief Model and the Transtheoretical model) described in an introductory lecture. The goals of the assignment were to give students personal experience of the process of behaviour change, to heighten their awareness of barriers to change, help them to identify successful strategies, and increase their empathy for

people attempting to change their behaviour. An additional goal of the assignment was to improve the health of the students. The assignment was used for the first time in 2006, and students responded enthusiastically. Comments from students will be reported in the paper. We plan to evaluate the assignment by following up students after 12 months to ask them, in hindsight, whether they found the assignment increased their understanding of behaviour change, and if any improvements in their behaviour have been sustained.

Accounting and the Unfamiliar: The New Zealand Public Sector

Elena Poletti (Accountancy and Business Law)

In this session I explore some of the challenges I face in teaching a 300-level course in accounting for the public sector in the School of Business, and review the current response to them. ACCT 303 is a continually evolving course that introduces senior students to the public sector. The sector itself gives rise to a number of problems for the accounting with which students are already very familiar. The institutions and processes of the public sector are generally an unknown, and students often have little awareness of current events to provide a basis for learning. Taught this year for the first time on a semester basis, the course uses the extensive material available on government websites as the basis for discovery, questioning and debate, and application in new contexts. Students choose an entity on which to work during the semester, recording the process in a reflective journal, and present a final report on it that draws together much of the material studied in a concise and coherent form. In addition to the roles of preparer and user of accounts in which they are often cast, students in this course are also citizens.

Building Academic Skills through Active Learner Participation: A Case Study

Lesley Procter (Sociology Programme, Anthropology)

This paper will examine some issues relating to introducing first-year students to the requirements of tertiary study. Using a first semester 100-level sociology course as a case study, I shall argue that the first-year student is an apprentice to the academic craft, requiring teaching in not only academic knowledge but also in the skill needed to apply that knowledge within assessment practices at tertiary level. Those teaching at first year may employ a range of techniques and strategies to “induct” their students into the Community of Academic Practice. Using the model of legitimate peripheral participation (LPP), I shall outline some strategies employed in the assessment and teaching of my first year class and briefly discuss some problems encountered in that endeavour. I will conclude with a brief discussion of some data from a research project undertaken to assess the efficacy of those strategies in Sociology and the ways in which that data was incorporated into modifications to the assessment and teaching practice in subsequent versions of the course.

"Suddenly they all clicked" - Towards interactive learning

Maryam Purvis and Tony Savarimuthu (Information Science)

In this talk, we describe and report some results on attempting to make the large lectures more interactive by using the clicker technology as well as other methods in facilitating an environment that helps students to become active learners. The students can use clickers to answer the questions posed by the lecturer during the lectures. The responses are anonymous. Once the answers are received a histogram of the answers provided by the students is displayed. This gives the lecturer a clear indication of the understanding of the students. The lecturer can provide adequate feedback depending upon the results obtained. Since the students' responses are anonymous (not tracked), the students tend to be more willing to participate. We will discuss the use of cell phone as an alternative clicker technology. We will also briefly discuss other collaborative learning approaches that we have used in our courses such as Pair programming and use of discussion board to facilitate better understanding of the concepts covered in the lecture and labs.

Note: There will be a demo on using clicker technology during our talk.

Creating a Structured Environment for Postgraduate Studies

Thomas Rades and Sarah Hook (School of Pharmacy)

In recent publications on good practice in postgraduate research supervision (Kandlbinder and Peseta, 2001; James and Baldwin, 2006), important qualities frequently mentioned include: getting to know the student, establishing of a partnership, identifying a research plan, establishing reasonable expectations and encouraging to start writing at an early stage. It is also important to inspire, support and motivate the postgraduate student, especially in a situation of academic or personal crisis. These important qualities are also reflected in the University of Otago students' perspectives on quality supervision and problems encountered in supervision (University of Otago, 2006). One aspect of PhD supervision not usually mentioned, that we think is essential in providing a supportive research environment, is the creation of a postgraduate research group of sufficient ("critical") size and with an internal structure. In our Colloidal Delivery Research Group my colleague, Dr Sarah Hook and I have established a research team comprising of postdoctoral fellows, PhD students, and Postgraduate Certificate students. PhD students, whilst working on their own topics, are at the same time working in a research team, as the topics are matched and part of the bigger research theme. The PhD students also learn to supervise, a skill they most likely will need in their later professional careers and the Postgraduate Certificate students are provided with instant and competent feedback on the many day-to-day problems they encounter in the laboratory. In this presentation I will outline our efforts to create such an environment and explain the advantages of this approach.

James, R. and Baldwin G. (2006) Eleven Practices of Effective Postgraduate Research Supervisors. The Centre for the Study of Higher Education and The School of Graduate Studies, The University of Melbourne.

Kandlbinder, P. and Peseta T. (2001) In supervisors' words...An insiders view of postgraduate supervision. Institute for Teaching and Learning. The University of Sydney.

University of Otago (2006) <http://www.otago.ac.nz/study/phd/docs/studentperceptsupervision.pdf>

Teaching Postgraduate Ophthalmology on the Internet

Gordon Sanderson (Ophthalmology, OMS)

This paper will review over five years of experience of teaching the postgraduate diploma in ophthalmic basic sciences at Otago. This diploma is taught exclusively on the internet. It incorporates some innovative methods of content delivery, student assessment and interactivity, most of which were developed in Otago. The course which caters mainly to the Australasian market is run jointly with the University of Sydney.

Postgraduate Training in the use of Veterinary and Human Medicines for Research, Testing and Teaching.

John Schofield (Animal Welfare Office)

The objective of the training project was to create case studies to teach graduate students how to use Prescription Animal Remedies in experimental animals, for research purposes, and to familiarise them with the legislative requirements of the ACVM Act.

The analgesic mode of action of drugs, administration routes, pain management strategies and current best practice techniques have been explored through the interactive flash media presentation. Students will acquire the information we need them to master through experiential learning, by working through the case studies. Each study is devoted to a particular anaesthetic technique. Case 1 deals with injectable anaesthetic agents, and all the pitfalls that can arise with these drugs; case 2 deals with inhalation agents; case 3 with postoperative pain control, case 4 with infection control, and case 5 with the use of local anaesthetics. Legislative issues are managed by a specific module on compliance and drug security systems. The programme is completed by a practical review of euthanasia techniques. The total package provides a comprehensive review of the use of veterinary and human medicines in research, testing and teaching programmes.

Research-led Teaching in Ecology

Philip Seddon (Zoology), Kath Dickinson (Botany) and Tony Harland (HEDC)

This presentation is about how a team of lecturers developed an undergraduate Ecology course and how they encompassed the concept of research-led teaching into the curriculum. This developmental initiative was a response to a review of the Ecology Degree Programme and a prior audit of the University in 2000. As part of this process, Universities in New Zealand were examined on their approach to the teaching/research nexus and in particular the relationships between an academic's research and their teaching. In 2002, following the audit, the Ecology Degree was reviewed with the review panel recommending that the undergraduate programme be totally revised, taking account of an underlying theme of research-led teaching. We took this challenge into the development of the new second-year course ECOL 211 *Ecology of Communities and Ecosystems*, to explore how students might learn about Ecology through bringing research into the curriculum. We did this by using the subject and content of our own research interests but also (and more importantly) through

using the practice of research as a process to facilitate learning. In the presentation, we will give a brief outline of the curriculum and explain the impacts on student learning. These impacts will be framed around the concept of learning through authentic enquiry in which students use the same scientific research activities as professional ecologists.

Developing E Learning in Problem-Based Distance Social Work Education

Pat Shannon (Social Work and Community Development)

This short paper reports on a planned and staged introduction of e-learning based on the Salmon (2000) “five step” model, in a distance social work education programme for experienced social workers. A positive outcome raises important issues relating to ongoing group building, engagement and support within an asynchronous timetable. I conclude by noting the value of supported Online interaction as a valuable additional learning tool to enhance reflexive distance professional learning in Social Work.

Salmon, G. (2000). *E-moderating: The key to teaching and learning on-line*. London: Kogan Page.

Undertaking the Journey Together: The Importance of Peer Groups for Successful and Enjoyable PhD Study

Elke Stracke (Linguistics Programme, English)

This paper focuses on the importance of peer groups for PhD study. It summarises my experience of working with PhD students (in Applied Linguistics) in a group environment over the last three years at the University of Otago. The group work complements my supervisory meetings with the individual students. Firstly, I will discuss the genesis of this peer group. Secondly, I will focus on the content of our regular group meetings: sharing research, discussing research skills, preparing for conference presentation, clarifying administrative matters, etc. Social meetings add to these academically oriented sessions. Finally, I will discuss the benefits of peer groups for the PhD process. I will argue that working as a group fosters, among others, exchange, feedback, insight into the PhD process, moral support, as well as a supportive environment and contributes to making the PhD journey a successful and enjoyable one.

Examples, Blackboard Notes and Focus Breaks: First-year Students’ Perceptions of Helpfulness

Jacques van der Meer, (HEDC- Student Learning Development Group)

In May 2004, students at the University of Otago were surveyed about their perceptions of what had been helpful, unhelpful and what could be improved in lectures, tutorials and laboratories during the first semester. These open ended questions were added to the regular, twice-yearly OUSA survey of 100-level courses. For the purpose of a doctoral research project, the responses of first year students were extracted. Furthermore, only the first survey forms students filled in were included: students often filled in survey forms for different

courses. Close to 2000 survey forms were considered for analysis.

The data were analysed by assigning increasingly higher level conceptual categories, a ‘ladder of analytical abstraction’ (Miles & Huberman, 1994). At the highest level, most comments could be categorised under three categories of helpfulness: *access to help and resources*, *clarification of course related material and expectations*, and *engaging classroom environments*. Final refinement of the analysis is currently taking place.

The results suggest that in the category of *access to help and resources* first-year students consider the use of Blackboard, and particularly notes on Blackboard, to be of particular help. In the category *clarification of course related material and expectations*, the use of examples was deemed particularly helpful. In the category *engaging classroom environments*, the use of focus breaks by lecturers came in for praise by first-year students.

In this paper, I will provide a summary of the survey findings and illustrate some categories and sub categories with some typical student responses.

Miles, M. B., & Huberman, A. M. (1994). *Analyzing qualitative data second edition: an expanded sourcebook*. Thousand Oaks: Sage.

Integrating Online and Offline Design Education: Trans-Tasman Collaboration, Communication and Reflective Practice

Noel Waite (Design Studies)

In the first semester of 2004, students from the Design Studies Departments at Otago University and the University of New South Wales collaborated via UNSW's Omnium web interface (<http://www.omnium.edu.au/project/>) in a course entitled “Graphics, Global Communication & Society”. The course brought students from both universities together in an online environment to examine and participate in the production and consumption of communication design in a global environment. In the second semester, the Otago contingent continued their inquiry in a conventional studio environment and then reflected on the different approaches and outcomes that resulted from these processes. This paper examines the way in which an integrated approach to online and offline learning facilitated reflective practice (Schon, 1995), both in the sense of reflective communication design practice and reflection on computer-mediated learning.

Multiple Perspectives – A Discussion on the eLearning Application “Behaving Scientifically”

Rob Wass and Karen Ludwig (Zoology), Jenny McDonald and Michael Crawford (Higher Education Development Centre)

An eLearning project is often only evaluated against the intended learning outcomes and there may be little opportunity for reflection on the process involved in producing the resource, and little consideration given to the multiple perspectives of the people involved in its creation. In this presentation we will provide a brief overview of the “Behaving Scientifically” software

and discuss its development from a panel that represents the perspectives of the institution, the developer, the teacher, and the student.

In this discussion we will reflect on some personal experiences that were very positive, and identify some universal barriers that affected the development of this resource and/or reduced its effectiveness. In doing so, we hope to improve and expedite the developmental process for future CALT projects. Some of the questions we will be considering include:

- How did we get from the broad teaching and learning outcomes outlined in the original CALT proposal to the point where students were actually using the technology in the labs?
- Was there a tension between technology and pedagogy in this project? Is this tension a general feature of educational technology developments?
- What were the factors that influenced technology choices?
- Did the completed project meet the teaching and learning outcomes we set out to achieve?

Abstracts: Workshops

Field Courses: Teaching, Philosophy and Politics

Tony Harland (Higher Education Development Centre)

This discussion seeks to bring field course teachers from all disciplines together to talk about three themes that I have identified from the research literature. The aim is to tease out the core elements of each theme by sharing ideas about practice in order to develop clearer thinking in this curriculum area. In this sense I am using the Spotlight Colloquium as an opportunity to start a wider discussion about field teaching across the university.

Theme 1 Teaching

For example: Issues around teaching are concerned with the type of learning that a student does on a field course, why certain teachers have a strong value for this form of teaching and how field-course teaching aligns with Otago's Strategic Directions to 2012 and the revised Teaching Plan.

Theme 2 Philosophy

For example: What we want from an education that is said to be 'higher'; how can we achieve such an education in a mass system, and are field courses the last bastion of a liberal education (Harland et al., 2006)?

Theme 3 Politics

For example: Why field courses are disappearing from University curricula. How departmental politics affect individuals on various issue such as workloads or what counts as teaching. How field courses are funded and their use as a key marketing tool.

Harland T., Spronken-Smith R.A., Dickinson, K.J.M. and Pickering, N. (2006) Out of the ordinary: recapturing the liberal traditions of a university education through field courses, *Teaching in Higher Education*, **11**(1): 93-106.

Understanding Clinical Reasoning: Strategies for Teaching

Paul Hendrick (Physiotherapy) and
Carol Bond (Higher Education Development Centre)

A recent study at the University of Otago found that physiotherapy students understand clinical reasoning in five qualitatively different ways: reasoning as applying knowledge and experience to the problem, patient or situation; reasoning as figuring it out; reasoning as rationalising/justifying what and why; reasoning as combining knowledge to reach a conclusion; and, reasoning as prototype building. These experiences ranged from less to more sophisticated understandings. Further cross category analysis showed dimensional attributes focusing on the view and direction of application of knowledge; temporal features; approach and view of learning; and the role of confidence in the students' experiences of reasoning. In this workshop we will describe the findings in more detail and generate strategies that are likely to help students develop more sophisticated understandings of reasoning.

On Line Microscopy: Use of the Internet to Deliver Advanced Microscopy to Third Year Anatomy Students

Ruth Napper, Richard Easingwood and Andrew McNaughton
(Anatomy and Structural Biology)

A knowledge of the ultra-structure of cells and the location of cellular processes is integral to understanding the function of an organism. In the past much of this knowledge has been gained by small groups of students using the transmission electron microscope (TEM) in laboratory sessions or, less than ideally, by viewing selected micrographs. As class sizes have increased, accommodating classes in the microscope room has become an untenable method of teaching. An alternative method for hands-on data collection was needed.

With the upgrading of the University of Otago LAN the speed of data transfer is sufficient to allow responsive and reasonably reliable communication between remote PCs and the TEM and confocal microscope. Active control and interaction with the samples in these advanced research microscopes is no longer restricted to being in physical proximity of the microscopes - users can be anywhere on campus.

This facility has been used in laboratory classes for students taking ANAT 335. Groups of 8 students work together to survey a tissue sample in the TEM and identify appropriate structures. Each student captures their own images, which are printed in the classroom. The student then uses these images to complete a set task within the laboratory class. The confocal laser scanning microscope is used similarly with each student exploring a specimen labelled using immuno-fluorescence. Remote access allows students to work as individuals within an interactive group setting and to experience 'hands on' data collection in a manner similar to that used in a research setting.

The Research-Teaching Nexus

Thomas Rades and Pauline Norris (School of Pharmacy)

There has been considerable discussion around research-informed, research-led, and research-oriented teaching, although these terms are used differently by different commentators. The "Strategic Direction to 2012 Imperatives Working Group – Achieving excellence in research-informed teaching" committee distinguishes teaching and learning from, about and through teaching.

In this workshop we explore the different relationships between research and teaching at the University of Otago, and opportunities for increasing the links between these two major aspects of academic activity.

We will start the workshop with an outline of the dimensions of the research-teaching nexus, and describe examples from our own teaching in pharmacy. Participants will then work in groups to identify different models of the relationship between teaching and research within their own practice. They will then share these with the group. The goals of the workshop are:

- to explore the range of relationships between research and teaching across different faculties of the university, and thereby give a practical meaning to the various terms used to describe the research-teaching nexus;
- to share examples of best practice in strengthening the relationship between teaching and research.

The Philosophy and Components of a Highly Regarded Small Group, Case-Based Learning Programme

Peter Schwartz (Pathology)

In 1988, the Department of Clinical Biochemistry abandoned all lectures and practical classes in favour of small group, case-based learning for medical students. Since then, this style of teaching has been enthusiastically received by both students and teachers. The programme itself and the participating teachers have received numerous teaching awards from the students. In this workshop, I shall first briefly summarise the history and philosophy of the programme and then describe and demonstrate the components of the system as well as several elaborate games and puzzles that we use to let the students integrate and revise the material that they have learnt. Although the examples are highly specialised, the philosophy and principles of the method should be adaptable to many teaching situations. I anticipate having plenty of time to answer questions and discuss ideas about methods that others could use that would employ key features of the system I shall be describing. To assure that everyone has the opportunity to see the demonstrations, ask questions and receive personal attention, attendance at this workshop will be limited to a maximum of 12 participants.

Using High-fidelity Simulations to Learn about Safe and Effective Clinical Outcomes: The SECO Clinic

Martyn Williamson (General Practice) and
Anthony Egan, (Department of the Dean, Dunedin School of Medicine)

Over recent years the effectiveness of clinical management and the safety of patients (and to a lesser extent clinicians) have become issues in clinical practice. At the same time debate on the targets of assessment has variably focussed on knowledge, competence, performance and, to a very limited extent, clinical outcomes. Assessment itself has been evaluated for both its summative and its formative potential and here we argue that *all* assessment should guide student learning towards professional practice and summative assessment should provide an account of suitability for professional practice. Further, we argue that the context for assessment and the criteria used should correspond as closely as possible to professional practice.

High fidelity simulations offer the possibility of learning about safe and effective clinical practice in a way which is safe, supportive and which optimises feedback for the student. We call these simulations SECO (Safe Effective Clinical Outcomes) clinics.

The first part of the workshop will be an exposition and discussion of the principles of safe,

effective and proficient practice. This will be followed by a description of high fidelity simulations and a video tape recording of a simulated consultation followed by discussion.

The workshop will be of interest to healthcare professionals in particular but the principles and methods are potentially adaptable to other forms of professional practice.

Abstracts: Posters

Internet-based Videoconferencing for Distance Teaching and Professional Development

Carina Bossu¹, Sarah Stein², Robyn Smyth¹ and Peter Shanahan¹,
¹University of New England, Australia, ²Higher Education Development Centre

The University of New England, one of the first universities in Australia to introduce distance education at the higher education level, is facing another challenge as it attempts to implement IP (Internet Protocol) videoconferencing for teaching and learning, with the same success it has done with other technologies. This paper reports on a study which aimed to investigate lecturers' perceptions of using videoconferencing to support learning and teaching. Using interviews and observations of videoconferencing sessions, plus an anonymous questionnaire, issues related to the practicalities of teaching and learning with new technologies, and technical and interaction issues, were raised. While the lecturers involved were experienced educators, and experienced users of technology to support teaching, their use of videoconferencing was limited. The results highlighted the importance of participants having a good sense of the many technical elements involved in conducting videoconference based teaching sessions, with the consequence of them, therefore, being sensitive to, and open to, learning, practicing and developing a conscious knowledge of appropriate protocols for planning, preparation and interaction. Implications for professional development, for teaching and learning using videoconferencing, and for the nature of support that institutions can provide to enhance the teaching experience for its staff are outlined.

This poster presents an overview of the study, including a brief summary of background literature, a description of the context and a list of the outcomes and implications of the study.

Stars'n Stripes Meet the Silver Fern: How Similar are our Millennial Students?

Nell Buissink-Smith, Gabrielle Grigg and Rachel Spronken-Smith,
(Higher Education Development Centre)

Those people born between 1978 and 1995 are considered to be members of the Millennial Generation. Using data from the Otago Millennium Graduate Study (Spronken-Smith *et al.*, 2005) this poster explores the seven suggested characteristics of the Millennial Generation (Howe and Strauss, 2000) in the New Zealand context and it compares the characteristics of United States Millennials with those of New Zealand Millennials. While the New Zealand data strongly supported some characteristics, such as team orientation and a strong sense of immediacy and connectivity, other characteristics such as parental co-purchasing were less supported. Some characteristics had very limited support, for example, social and religious conservatism, but other characteristics were much stronger in the New Zealand environment than in the original seven characteristics; the Otago graduates surveyed tended to have 'millennial' expectations of higher

education; they largely valued independence; and demonstrated an understated nature and could be described as modest and humble.

It is worth distinguishing therefore between the mostly American literature such as Howe and Strauss, based on the North American context and the New Zealand situation as our data suggests that these are not identical. The characteristics of New Zealand Millennials are a rich source that could be of great benefit in informing institutional policy, guidelines, documents, and marketing. The poster concludes with a discussion of implications for tertiary teaching in New Zealand.

Howe, N., and Strauss, W. (2000). *Millennials Rising The Next Generation*. New York: Vintage.

Spronken-Smith, R.A., Bussink-Smith, N., Grigg, G and Harland, T. (2005) The Otago Millennium Graduate Project: Report for Participants. Unpublished report, Higher Education Development Centre, University of Otago, 47pp. [<http://hedc.otago.ac.nz/research/millgrad.asp?menuID=millgrad>]

An Exploration of the Influencing Factors that Might Encourage Successful Learners

Catherine Fowler (Communication Studies)

This project derives from interviews with three post-graduate students from Canada, Germany and New Zealand. Each was asked about their memories of their first few years at University and how they became successful learners. Responses indicate that students worked out what lecturers wanted from assessment feedback and other students, rather than being directly told by either the institution or the lecturer. The experiences of these students prompt further consideration of the influencing factors that might encourage successful learners, including:

- The importance of dialogue between adjacent educational contexts (for example a sound knowledge on the part of tertiary teachers, of how their subject is taught at NCEA level)
- Recent thinking about teaching strategies that might encourage successful independent learners: ‘assessment as a socially situated interpretative act’ (Shay, 2005); or ‘action learning environments’ (Wilson and Fowler, 2005)
- The increasing transparency of support for student learning at the institutional level

Shay, S. (2005). The assessment of complex tasks: a double reading, *Studies in Higher Education*, **30**(6): 663-679.

Wilson, K. and Fowler, J. (2005). Assessing the impact of learning environments on students’ approaches to learning: comparing conventional and action learning designs. *Assessment and Evaluation in Higher Education*, **30**(1): 87-101

Understanding Learning Moments in the University Context

Simon Hart (Central Library)

A model for understanding learning moments within the University context is presented. With the world of knowledge divided into electronic and hard copy environs students, teachers and librarians interact to these environs as partners to enhance life long learning. Factors specific to students, teachers and librarians are listed and references provided. Further consideration of these factors should better position the reader towards identifying opportunities to enhancing learning moments.

Does Simulation Training Improve Junior Doctors' Ability to Deal with the Acutely Unwell Patient on the Ward?

John Thwaites^{1,2}, Phil Hider², Steve Smith¹, and Dale Sheehan¹

¹ Medical Education and Training Unit, Canterbury District Health Board, Christchurch

² Christchurch School of Medicine and Health Sciences, University of Otago.

One of the expected outcomes listed by the Medical Council of New Zealand for medical training in New Zealand is the ability to manage the critically ill patient. At the Canterbury District Health Board (CDHB) we addressed this need as part of the formal clinical skills training programme. We chose patient simulation as the teaching method as it provided a safe and standardised learning environment where events could be scheduled, repeated and observed. It also offered the potential for greater effectiveness and rigour over traditional methods, and the opportunity for junior doctors to acquire as well as demonstrate their knowledge and skills in a clinically relevant setting.

This training is resource intensive and there is a notable absence of research on the effectiveness of simulation training to improve the knowledge, skills and attitudes of junior medical staff. Is it better than traditional didactic methods of teaching? Does it add to clinical learning or is it an expensive extra? Most importantly, questions also remain about whether any newly acquired knowledge and skills from this training are then readily transferred to patient care over a sustained period of time.

Currently a team from the Medical Education Training Unit at CDHB and Christchurch School of Medicine and Health Sciences are undertaking a research project to assess the impact of simulation training on junior doctors' ability to deal with sick and deteriorating patients encountered on the ward. This poster shares the research design, aspects of how learning and information transfer into clinical practice will be assessed and some initial findings from the research.

Mission Critical: Improving Learning Outcomes in a First Year Information Science Course using Digital Game-based learning

Andrew Long and Lance Elder (Information Science)

The Mission Critical project was hatched last year as an attempt to address serious issues of student engagement and participation in first year courses in Information Science. As a response to this situation, a digital-game based learning (DBGL) approach was seen as having the most potential for addressing the key issue of engagement. The idea of taking a technology used primarily as entertainment to educate is perceived in some quarters as novel even revolutionary. Why should it be? An interactive, 3D, persistent, multi-player, social, immediately responsive experience is consistent with how students currently live their lives. As a result, DGBL (or serious games) are an active field of research where many institutions are exploring ways to integrate this new approach into their curricula. The goal of this project is to transform a first-year pre-requisite paper (COMP 102 – E-Business and Information Systems Development) into a digital game for use as the primary delivery approach.

Dogs Don't Eat Fruit

Alison Meldrum and Jules Kieser (School of Dentistry), and Tony Harland (HEDC)

This research is about challenging the assumptions students have about their learning, about knowledge and what the university system requires of them. The rather cryptic title and the idea of a fruit-eating dog provides an analogy for this work. Ask yourself - what do dogs eat? Watch them eat an apple and then ask again.

Our allied dentistry students believe their teachers want them to be able to repeat factual knowledge. Even when we ask for something different in learning, even when we challenge their assumptions about factual knowledge, they are so encultured by a system of education that, although they understand alternatives and recognise different forms of knowledge, it is not enough to convince them that there are better ways of being a learner and becoming a professional (Harland et al., 2006).

We think this situation has arisen for two main reasons. Firstly, the domination of health professional education by what Thomas Kuhn calls 'normal science', and secondly, because the teaching profession in universities is, on the whole, not professionalised. In this poster we provide a model to show a better alignment of teaching and learning and the fragmentary nature of knowledge.

Harland, T., Kieser, J. & Meldrum, A. (2006) Cultural fragmentation of knowledge in clinical teaching, *Teaching in Higher Education*, 11, 2: 149-160

The Junior Doctor Experience

Joy Rudland (Medical Educational Group) and Kelby Smith (Medicine)

Junior Doctors in New Zealand (House Surgeons) have just completed their undergraduate medical education, and are currently immersed and working in the hospital environment. Their skills and knowledge learnt previously in their undergraduate education are put immediately into practice in the working hospital environment.

Utilising their recently graduated status combined with their experience in the junior doctor role, this research investigates:

1. What they perceived to be the most effective and ineffective learning experiences during their undergraduate medical school education at Otago School of Medicine.
2. Their current experience of being a practicing medical professional.
3. Perceptual changes as they progress through the medical profession.

This project is longitudinal in design using participants who have graduated from the Otago School of Medicine. Two phases of this project are presented.

Phase I: looked into students who were on the verge of completing their last year of medical school (the Trainee Intern or TI year). Their initial views on the undergraduate programme were gauged.

Results: Particular aspects that were seen as underdeveloped for their upcoming role as a House Surgeon were things such as practical skills and knowledge (e.g. ABG's, practical pharmacology). Beneficial experiences were ones that mirrored their future role and increased confidence and responsibility.

Phase II: looked into House Surgeons in their first year as a practicing doctor, reflecting on their current experience and on their undergraduate experience.

Results: Preliminary analysis illustrates the House Surgeon negotiating their way around their new role, describing new experiences such as death, and their new 'working role' combined with how the undergraduate programme hinders and/or facilitates these new experiences.

Experimental Work in the Undergraduate Pharmacy Curriculum: In Vitro Drug Release from Verapamil Hydrochloride Tablets

Dorothy Saville (School of Pharmacy)

Purpose. To evaluate *in vitro* drug release from commercially available verapamil hydrochloride tablets as part of an undergraduate laboratory. (This laboratory formed part of a new integrated curriculum). **Methods.** Dissolution testing of two brands of verapamil hydrochloride tablets was carried out [USP 2 (paddle) Apparatus; 50 rpm; 0.01 N hydrochloric acid; 10, 20, 30 and 40 min samples]. Samples were analysed by UV spectrometry at 278 nm. In total, 60 tablets of each brand were tested. Students worked in groups of 4 to 5 with each group testing three of each brand. After completion of the experimental, the students wrote up their results as a scientific report. Reference to prior

studies on dissolution of verapamil hydrochloride tablets and also to the use of multi-source medicines was expected. **Results.** Both brands showed good dissolution at 40 minutes but considerable variability in the shape of the dissolution profiles. Some of this was clearly inter-tablet variability (within-Brand and between-Brand), while some appears to have been a Run effect, possibly due to several sets of dissolution equipment being used or to timing of samples. As no sample dilution was required, the only other student error would have resulted from UV analysis technique. The short time-frame for the actual experimental allowed students time for data analysis and presentation (Excel and Minitab). **Conclusions.** With this practical experiment, the students have first-hand experience with an official testing procedure and equipment and with two multi-source products. Scientific writing skills are also developed.

Experimental Work in the Undergraduate Pharmacy Curriculum: Drug Release from Enteric Coated Tablets

Dorothy Saville (School of Pharmacy)

Purpose. To evaluate drug release from enteric coated tablets as part of an undergraduate laboratory. **Methods.** A selection of enteric coated tablets was evaluated sequentially in a range of media from pH 2.0 to pH 6.0 using a Reciprocating Cylinder Apparatus (USP Apparatus 3). (30 dips per minute; 10 minute dip interval for the first five rows and 45 minutes for the last row (pH 6.0)) After immersion in each medium, the coat integrity was determined. The BP Disintegration Test for enteric coated tablets was also carried out. **Results.** Usually tablets retained their integrity until reaching a pH corresponding to intestinal pH; some released at pH 5.0, some at pH 5.5 and some at pH 6.0. However, one batch of tablets released drug both at pH 2.0 (in the reciprocating cylinder apparatus) and also in the acid stage of the BP disintegration test. Subsequently, after contacting the company concerned and MedSafe (NZ), there was a batch recall. Scanning Electron Microscopy showed small holes in the coating. The reason for the batch failure was not investigated. In carrying out this experiment, the students are required to investigate the role of pH sensitive polymers and also the purpose of enteric coating for some oral products. **Conclusions.** With this practical experiment, the students have first-hand experience with official testing procedures and equipment and with a selection of enteric coated products. The occasional identification of a failing batch highlights the need for quality control testing procedures and also procedures by which batches are recalled.

Experimental Work in the Undergraduate Pharmacy Curriculum: Effect of Ointment or Cream Base on the Effect of Methyl Nicotinate

Dorothy Saville (School of Pharmacy)

This student laboratory involves the testing of small spots of ointment or cream containing methyl nicotinate on the inner arms. Four bases are used: White Soft Paraffin BP; Aqueous Cream, BP; Macrogol Ointment, BP; Cetomacrogol Cream, BPC. High strength 1% and low strength 0.2% methyl nicotinate are used. Onset time (in seconds), as estimated from time to show erythema (redness), is recorded for each application. Participation is not compulsory and before participating, each student must sign an Informed Consent sheet. Results are analysed using three factor Analysis of Variance (base; subject; concentration). The General

Linear Model (GLM) is used for statistical analysis. Results show significant differences between some bases, usually between subjects and between concentrations. The educational advantages of the laboratory are perceived to be:

- * student learning about Ethics Approval requirements for *in vivo* experimentation
- * first hand experience with the process of obtaining Informed Consent and what that means for an individual - the right to choose to participate or not; to withdraw from the experiment at any time; to have all questions satisfactorily answered before proceeding with the experiment
- * learning about and application of statistical analysis -three factor ANOVA (GLM) - using Minitab software
- * recognition that there can be extremely large intersubject variability in erythema onset times
- * recognition that the topical base, for many reasons, can influence drug effect

This is an old experiment but can be used to advantage to develop important statistical skills and an appreciation of the requirements of *in vivo* experimentation.

Learning in the Zone

Rob Wass (Zoology), Tony Harland (HEDC) and Alison Mercer (Zoology)

This poster outlines the early stages of a research project examining the development of learning and knowledge in Zoology students as they pass through the different stages of their degree programme. It poses several questions that have not been addressed in the research literature.

From a development of learning perspective, relationships between theories of learning and experience are not well understood. The dominant paradigm of constructivism suggests that individuals create their own new understandings based on an interaction between what they already know and can do, and the new knowledge that they come into contact with. The social constructivists (after Lev Vygotsky) would also argue that all knowledge is socially constructed, that is, the individual learns only from a social interaction of one sort or another. Vygotsky called this phenomenon the zone of proximal development (ZPD). The ZPD bridges that gap between what is known and what can be known under adult guidance or with collaboration with a more capable peer. Vygotsky claimed that learning occurs in this zone and that learning leads development. But how do students experience and understand this phenomenon? Furthermore, how will insight into their own learning (through taking part in the research) alter their perceptions and their ability to learn, and what can teachers learn from these experiences?