

ACADEMIC PROMOTION - LEVEL B to C

ACADEMIC PROMOTION APPLICATION FORM



PLEASE COMPLETE AND FORWARD TO:
DIVISION OF SERVICES AND RESOURCES

HUMAN RESOURCES BRANCH

This form is to be used to apply for academic promotion.

INSTRUCTIONS

1. This application form must be accompanied by an:
 - i. Up-to-date Curriculum Vitae (*6 page limit*).
 - ii. Commentary on achievements (*4 page limit*).
 - iii. Evaluation of teaching for 2 semesters in last 3 years with an explanation of their impact on changes in your teaching practice should form part of your commentary.
 - iv. Teaching Portfolio (*up to 6 pages*)
 - v. Publications list including leading author page numbers and percentage contribution.
 - vi. Grant funding achievements, including funding source, amount awarded and years applicable, and whether first named Chief Investigator or Co-Investigator.
2. Please address only 3 of the 4 categories (*unless applying as a special case*) including both Teaching and Research **provide 1 hard copy** of all documentation.
3. All applicants should refer to the relevant policy, guidelines and toolkit at http://www.adelaide.edu.au/hr/policies/prom_class/

APPLICANT DETAILS

Title and Family Name: Mr XXXX

Given Names: XXXX XXXX

Faculty/Division: Deputy Vice-Chancellor & Vice President (Academic)

School/Department: Centre for Learning and Professional Development (CLPD)

Account code for printing (must be completed): UNIAD / 3014 / 15 / 732 / 00 / 2008 / 15012900

Email address: xxxx.xxxx@adelaide.edu.au

Do you wish to make application as a special case on any of the following grounds?

Research Only staff member

Title holder member

Staff at 0.6 fte or less

EMPLOYMENT HISTORY

Date of appointment: March 2004.....

Current level of appointment: Level B.....

Dates of previous promotions: None.....

1. TEACHING, INCLUDING SUPERVISION

I have been a staff member of the University of Adelaide since 1990. Currently I am Coordinator of Evaluations and Assessment in the Centre for Learning and Professional Development, with responsibility for the design and operation of the Student Experience of Learning and Teaching (SELT) program. This leadership position allows me to assist University staff to improve their teaching through the reflective use of student feedback. Although formal teaching in a Faculty was not required for my position, I felt it would significantly improve my ability to assist other academics with their teaching if I taught an undergraduate course and obtained student feedback through SELT myself. By teaching and developing educational resources for teaching I am able to contribute to student learning in an authentic manner and develop more credibility with academic staff because I know first hand the issues they face in the classroom. My role in academic staff development is not just based on theory, but on practical experience.

Over the last 4 years I have been teaching second year physics students (> 240 hours over 6 semesters). I interact with the students as people, use humour and show a genuine interest in them and enthusiasm for the course. I acknowledge that some things are difficult, and that hard work is often the only solution for some problems. My SELT results for effectiveness as a university teacher average at 6.3 (out of 7) amongst the highest at the University and well above the discipline average of 5.4.

I understand that the student population is a diverse one, with differing abilities and learning styles. This perspective allows me to adapt my teaching to a level where I can be clearly understood. I encourage students to understand why things happen and try and encourage an enquiring mind. By using topical examples I can encourage interest in the course I am teaching, but also make it easier for students to understand complex physics concepts, which can often be anti-intuitive. Where I can see students have not grasped a concept, I re-examine the problem in a completely different way, usually with a better outcome. I like to have the students think for themselves and have developed strategies to encourage this. This often involves taking a problem back to basics, quizzing the student or group at multiple points and ensuring that the student has the groundwork to be able to solve the problem. It is not unusual to find that a student has a basic misconception carried forward a number of years, which must be addressed before full understanding can be developed.

My SELT feedback has been constructive: the comments very positive and quantitative results in all questions are typically above 6 (out of 7). I have focussed on stimulating students in their learning to a greater extent, and undertook the Graduate Certificate for Higher Education over a two year period, to discover new techniques, which would be helpful in the classroom and allow me to suggest alternative teaching strategies to academic staff in response to their SELT feedback. One strategy I am currently implementing is to divide my students into pairs to discuss new concepts, before I intervene to address any misconceptions. By encouraging this greater participation and responsibility in their own learning, the students report that their interest in the course has been stimulated to higher levels than I have been previously able to attain with them. (see teaching portfolio)

My other discipline teaching is in the Discipline of Surgery, I have been part of a two man team which has developed an online curriculum for the surgical component of the MBBS program as well as introducing electronic voting systems into the classroom for students. My colleagues and I had noted that not only were many medical students reluctant to participate in class, they were also experiencing difficulty with medical tasks, such as managing clinical situations. Although needing more exposure to real life clinical situations, it was logistically impossible to arrange additional patient encounters, so we decided to provide online, simulated encounters with patients as part of a formative assessment program. I wrote the software, called Medici, and developed a web site to accompany it. I devised a formative assessment strategy to make the resource an effective teaching tool. In the first full year of implementation, over 200 students used Medici, solving over 70,000 individual problems and receiving comprehensive feedback on **all** of them. The students in that year performed 20% better than previous cohorts in their end of attachment examination and students cited Medici as a key motivator in their learning. This award winning program, has been used to develop content for universities worldwide and has been used by multinational corporations as a training tool for their staff.

Survey results from students have been overwhelmingly positive and has assisted in guiding the development of the formative assessment tool and recent (2007) SELT results This teaching work and its outcomes *has culminated in the joint awarding of the Stephen Cole the Elder award for Excellence in Teaching in 2007.*

This approach to learning has been further endorsed by the office of the DVCA&VP by the provision of \$32000 to transfer the methodology to the Faculty of Science.

Not only have I taught in the faculties, but I also teach in the CLPD. Additional teaching duties have been carried out in the Teaching at University program and the Graduate Certificate in Higher Education (GCHE). The co-ordinator of the GCHE wrote "XXXX XXXX was a dynamic contributing member of the GCHE Development Team. This team conceived of and formulated an innovative conceptual framework for the whole program, and developed it.", and "XXXX was also pivotal in its successful implementation, both theoretically, in his contributions to evaluative components, and practically, in inspiring a cross-disciplinary community of practice to emerge amongst program participants. Both of these features have a substantial ongoing positive impact on the GCHE."

2. SCHOLARSHIP, RESEARCH, CREATIVE ACTIVITY

Creative activities enhance knowledge and understanding

As a long term staff member of this University I am aware of the importance of research in the institution. My position description requires me to allocate up to 60% of my time to administration of the SELT system with the remaining 40% divided between teaching research and service. Despite this heavy administrative load, I have managed to maintain an active research profile.

As part of my position, collaborative approaches with the rest of the University community are essential. I have instigated a large amount of educational research throughout the University with collaborators in all Faculties. I feel that educational research in particular, due to its need to be disseminated and be generalisable, should not be carried out in isolation. In a collaborative environment, there is a greater chance to influence large groups of educators and thus enhance benefits for students.

Preparation of grant submissions and funding proposals attracts funding for research

Research funding has been attracted via a submission to the Chinese University of Hong Kong. The value of this was \$125,000 and will be used to research methods of formative assessment using technology. Learning and Teaching grants, each worth \$32,000 were successful in 2007 and 2008 to examine assessment practices in different faculties, and to provide supplemental online practical exercise which will use the Medici program discussed earlier. An expression of interest for a Carrick grant has been approved for the next stage of development. Additional information on funding obtained is on page 21

Presentation of scholarly papers, attendances and addresses to conferences; basic and applied research results in publication.

The main form of scholarship dissemination in academic development is through presentation at conferences – this has the biggest impact on colleagues. Since my appointment in mid 2004, my work has been presented at national and international conferences on 19 occasions. In addition to these presentations I have also provided two workshops at conferences, which were well attended and received. I have had 11 peer refereed articles published or accepted for publication since 2004. This is in addition to a strong body of work established prior to my current appointment (see publications). My academic duties are focussed towards collaboration and helping raise the standard of teaching at learning at the University. My publications are invariably joint efforts and rewards for my labours are often shared.

Consulting work assists in forging links with industry

The Evaluation and Assessment service provides evaluation services for two external institutions. The total value of this consulting since 2004 is \$500,000, and my involvement in the contract process has been integral to obtaining this funding; in particular a 3 year contract worth \$300,000. The quality of work completed for these institutions has meant that the University has gained a reputation for providing quality evaluation work, which has encouraged additional contract work with the Northern Territory Emergency Services and the Flinders University School of Education.

A seeding project worth \$12000 with a pharmaceutical company to provide interactive, educational material both here and in Scotland will likely lead to further collaboration with a rich source of funding in the future

I have been heavily involved in the development of educational CD-ROMS and web sites. One CD was developed and published by the Heart Foundation and is used by the Flying Doctors. Another is part of a health promotion strategy in the main foyer of the Royal Adelaide Hospital and others have been published by international pharmaceutical corporations to train their staff. Another multinational corporation is using content developed here in their own international website.

Effective research team leadership and management are demonstrated

I have established and convene the Education Research Group of Adelaide (ERGA). ERGA is a cross-disciplinary group of educators, focused on research in education. This highly dedicated group of academics, working in education, is focused on educational research and obtaining grants from external sources to support this research.

ERGAs achievements so far include running two national conferences, a membership of 170, which covers all faculties within our University and representation from other universities, a journal, seminars from national and international speakers as well as obtaining grant funding for two projects on assessment in 2007 and 2008.

As a direct result of my leadership in this group, 44 University of Adelaide staff have been able to develop their educational work to the high standard required to present at ERGA conferences and 4 have so far published their work in ERGA's peer-reviewed journal, *ergo*. The unique structure of ERGA and its development have been described in a paper which has been accepted at the 2008 HERDSA Conference in New Zealand later this year.

Research outcomes for clients

My own research has allowed me to provide expert assistance to those at the university who wish to evaluate their own educational initiatives, such as a project evaluating electronic voting systems within the discipline of Obstetrics and Gynaecology. An article on the results of this has been submitted to an international, peer-reviewed journal. A research survey on social inclusion formed an integral part in satisfying the conditions of an ARC grant, which led to a conference presentation and journal publication for a client. Work on a mentoring project with an external firm has led to the development of a paper which is currently with reviewers for the journal *HERD* as well as positive outcomes for mentoring strategies at this University.

Investigations of practical problems, may not result in publications, produce significant new insights

Current research work has been on formative assessment strategies using online tools. A strategy has been devised which has been shown to motivate students and provide improved learning outcomes. The results of this work have formed the core of an Expression of Interest for a \$200000 grant to the Carrick Institute, which has been given approval to proceed to the next stage of development. Without this background research, it would have been impossible to find collaboration for the grant proposal or put it forward with confidence.

A project in the medical school looking at the quality of the critical, final MBBS exam has been a six month project. The outcomes and recommendations have had an immediate impact with significant changes likely to be made to the examination for this year. Publication of results will follow, but the research has had immediate impact on the assessment of students in this area.

3. ADMINISTRATION, SERVICE, AND LEADERSHIP IN THE UNIVERSITY

My duties are to provide academic support to staff carrying out evaluations, provide an academic input on decisions affecting evaluations and assessment and assist University of Adelaide staff with research and support services. This service component of my duties is the major benchmark of good performance in my position as indicated by PDR and performance management processes and my administrative role at the University of Adelaide has been exceptional. In addition to serving on a variety of University committees, I have provided a responsive and efficient service for the university which meets the needs of students, academic staff and our administrators. As the academic interface within CLPD, I provide advice on evaluations and assessment, actively engage with lecturers around the university to address areas of weakness highlighted by their SELTs and plan the development of my area in accordance with the university strategic plan and academic requirements. The items below refer directly to specific areas of the University strategic plan which I have addressed

Continue to develop higher standards of student service delivery through the provision of highly efficient, responsive and streamlined administrative, information and support services

As an academic staff member, I am aware of the requirements and timelines under which we must work. In order to be able to respond efficiently to student responses, we need accurate information quickly. I have set challenging criteria for the success of my area. When I first started in this position, the average turnaround time for a SELT was over 40 days. As an academic, this means I could not carry out a SELT and react to it in order to benefit my students. Working with a small team I have decreased turnaround times for SELTs to 2 days by introducing more efficient and productive work practices and introducing new technologies to my area. This has been a challenging process, made even more so as the number of surveys carried out at this university within this time has increased by 50%

Feedback to staff and students following a SELT is essential. Many staff wish to act upon the results from surveys and I have provided guidelines on the Evaluation web site to assist in the process of providing feedback to students. (<http://www.adelaide.edu.au/clpd/evaluation/feedback.html>) When staff need to make changes to their teaching, I provide assistance ranging from over the phone advice to carrying out a full active evaluation of their teaching. This unique evaluation technique has been carried out in Maths and Engineering and been reported at conferences.

An online SELT system has been developed. This password protected web site, will allow staff to create, download and run their surveys on paper or online, using standard or custom-made questions. The pilot stage of this project has

been evaluated and is now available for all staff to use as a trial. Staff will be able to produce surveys and examine results in a variety of new ways, which will aid in their development as teachers, allow them to reflect on their results and provide feedback to students with a minimum of effort, as well as assist in reviews of courses and programs.

My area is also providing new services such as exam marking and analysis and external survey consultancies. A simple tool for assisting lecturers who wish to analyse their assessments is currently under development.

In order to meet government requirements as well as to provide as much meaningful feedback as possible to the university community, the creation of aggregate reports for Disciplines, Schools and Faculties as well as the university as a whole has been a major project. The outcomes of this project have been excellent and this information is used by senior staff planners to assist in the development of our students. Aggregated teacher and course SELT information for the last 5 years have now been created with earlier years' data to be released later this year.

All programs should have scholarly integrity and are informed by the latest research methodologies; that programs are accessible and relevant to their students;

I have designed a Program SELT, which will allow staff to review their entire program. Designed to complement the Course Experience Questionnaire (CEQ), it allows staff to monitor, review and modify their programs before students finish their program. The CEQ is of great importance to the University, as it is one of the benchmarks used in the Learning Teaching Performance Fund. Good outcomes in the CEQ are reflected by an enhanced reputation for the University as well as significant financial benefits. The program SELT will assist the University in improving the CEQ results, and is of great strategic importance as well as enhancing outcomes for our students.

Enhance the support provided to continuing students to maximise their retention

I have run the Student Expectations survey for 2 years. The results show that staff expectations do not match with incoming students and strategies need to be put into place to address this mismatch. Unsatisfied students will possibly drop out; an unsatisfactory outcome. The University has responded quickly to this important information and areas have changed their O-week strategies to cope with the findings of this major survey and educate new students.

Continue to support research excellence

I am regularly involved in producing surveys for research projects. Research into Business Communications (Professions), Social Inclusion (AISR), Occupational Health and Safety (Architecture) and the quality of Modified Essay Question exams (Health Sciences) are all projects with which I have supported in substantial ways.

University business via Faculty and other activities; active membership and contributions to committees

I have involved myself in interview panels in order to have a voice in the future direction of the University. I have been a member of the working party looking at learning space within the university, and the Technology in Education committee. I am the convener of ERGA and a member of the Learning & Teaching (UG) Committee in the Faculty of Professions. I have been a member of working groups on the 2 ERGA conferences and editor for the journal Ergo.

SUMMARY (Optional)

As an academic in a service area, **my main duties** are to provide evaluation services to the University and provide academic input into the evaluation and assessment of programmes. Over 60% of my time is devoted towards administrative duties and this must be taken into consideration when examining teaching and research output. The amount of administrative development work required and delivered since 2004 has meant that other areas cannot have as much time devoted to them. Despite this I have provided excellent teaching service to the University, culminating in the Stephen Cole the Elder prize for Excellence in Teaching and have a solid research record, including presenting at many quality conferences and publishing in high standard peer-reviewed journals.

AUTHORISATION (SIGNATURE REQUIRED)

Applicant's signature: Date:

I am a professional educator with 15 years of experience in developing, implementing and analysing the impact of educational initiatives on tertiary students. A desire to help provide the best possible educational outcomes for students ensures dedication and loyalty to employers with the same goals. I believe that for students to achieve their best, we need to understand how they learn and how we can best teach them. Evaluating student learning and staff teaching is one of the most important actions any responsible university can take. I have an excellent track record in producing quality research and involve myself in funding, study design, analysis of results and publishing and take great pride in every facet of my work.

Full Name: XXXX XXXX XXXX

Address:

Phone:

Email: XXXX.XXXX@adelaide.edu.au

Date of Birth:

Languages: English, German

Education:

BSc (Maths, Computer Science, Physics), University of Adelaide, SA

BE(Hons) in Electrical and Electronic Engineering, University of Adelaide, SA

Year 12 465/500, Morphet Vale High School, SA

Education: Courses and Seminars

Managing Difficult Behaviour (Leadership Course) 2007

Building Resilience 2007

Graduate Certificate in Higher Education (awarded July 31 2006)

Professional Marketing 2006

ILM Maturity, Encryption and Security 2006

Teaching at University 2004

Blackboard Training and Advanced Workshops in Assessment 2003

Workplace Discrimination and Harassment 2002/2003

Occupational Health and Safety Course for Supervisors and Managers, 2002/03

Programming a Microsoft SQL 2000 Server Database, 2002

Administering a Microsoft SQL 2000 Server, 2002

Querying with a Microsoft SQL 2000 Server Transact SQL, 2002

Introduction to Flash, Intermediate Flash, 2002

Advanced Flash, 2002

OS X Administration, 2002

Windows 2000 Professional Upgrade, 2001

Advanced Lingo 1999

Regular attendance at Adobe, Macromedia, Microsoft and Apple seminars

Administrative and Service Positions Currently Held

Convenor ERGA (Education Research Group of Adelaide)

CLPD Representative to Faculty of Professions

Administrative and Service Positions Previously Held

Member HEWRRs staff representative committee

Member Learning Space Working Group, University of Adelaide

Convenor Medical School Web Site Development Committee

Member year 1 Curriculum Committee, Medical School, University of Adelaide

Proxy for Technology in Education Committee, University of Adelaide

Member Governing Council, Reynella Primary School

Member Educational Subcommittee, Reynella Primary School

President, Treasurer, Secretary: Local Strata Group

Treasurer: Southern Districts Hockey Club

Treasurer: Noarlunga Cricket Club

Captain: Noarlunga Cricket Club

Happy Valley Cricket Club

Marion Cricket Club

Southern Districts Hockey Club

Currently Employed by the University of Adelaide, Australia as the Coordinator of Evaluations and Assessment

I have been a successful team leader in all of my positions. As the coordinator for Evaluations and Assessment, I have built a small, highly productive team providing service to the University and developing new resources at a level it has never before seen. I am the founder and convener of the Educational Research Group of Adelaide (ERGA), a group dedicated to promoting evidence based teaching and research in education. This group has successfully held 2 national conferences on education and has produced the first issue of its educational journal, ergo.

I relate well to my team members and supervisors and have been able to achieve excellent results with my teams. I am confident in leading groups and appreciate the trust and respect I earn from my team members as it reflects, in turn, the faith and respect I show them.

I have an excellent track record in teaching, producing quality research and attracting funding. My main research interest is in the field of educational technologies.

Awards and Prizes

1. Stephen Cole the Elder award for Excellence in Teaching 2007 [Awarded]
2. Apple University Consortium (AUC) Best Practice in Innovation in Teaching Award 2005 [nominated]

Funds attracted

My area depends on external funds to function at the level required. Part of my duties has been to obtain and maintain external contracts. I have been able to do so based on personal contact and providing exceptional service. I have also actively pursued research funding for educational projects.

- I have been instrumental in attracting over \$1,000,000 in contracts and grants
- More than half of that has been obtained to support educational research, which is an exceptional result for an area which has traditionally been difficult to obtain research funds for.
- An expression of interest for a \$220,000 research project on formative assessment for 2009 has been approved to proceed to the next level by the Carrick Institute.

Teaching

My teaching duties at the University of Adelaide have included

- Online curriculum design and implementation, Discipline of Surgery (ongoing) [130 students]
 - Development of a formative assessment tool for medical students. Available on CD and online to provide interactive clinical scenarios. The data bank of questions and case studies is supported in part by the Australian Medical Council with whom I liaise to ensure security of their intellectual material. I have worked with many respected professionals and businesses in the field of Medicine to help them develop material for this assessment tool.
- Lecturer Physics II (ongoing) [25-30 students]
- Course design for Business Communications in the Faculty of Professions [150 students]
- Course coordinator Physics (Yr 3) [20-30 students]
- Coordinator of the online curriculum for the medical school [800 students]
- Lecturing to classes of 150 students.
- Tutoring small classes ranging in size from 8 to 40 students.
- Preparing course documentation for a variety of courses.
- Communicating regularly to staff and students about course work via electronic mail in a clear and concise manner.
- Preparing PowerPoint presentations for lectures.
- Liaising with teaching groups to determine needs and set priorities.
- Organising and participating in student assessment, including setting, marking and evaluating exams.
- Counseling students about course, career and personal matters.

My SELT results (Student survey on their experience of my teaching) have been excellent with broad agreement in most questions such as "How would you rate the effectiveness of this person as a University teacher" typically greater than 90% with an average scores on all measures over the last 4 years of 6.4 (out of 7)

Research

My work has been presented at national and international conferences on 32 occasions. In addition to these presentations I have also provided two workshops at conferences, which were well attended and received. I have had 23 peer refereed articles published or accepted for publication. My current research interests are in the field of educational technologies. My goal is to evaluate these technologies thoroughly to provide evidence for their adoption or otherwise for educational purposes. Examples of my published research include

- The use of iPods as devices for learning using interactive learning techniques (not just podcasts)
- The use of electronic voting systems in teaching large and small classes
- The use of online formative assessment strategies to motivate learning and improve student outcomes
- The use of case-based scenarios in classrooms to enhance student learning
- How technology has evolved and is evolving and its influence on education

Other research either completed or ongoing is related directly to Evaluation and Assessment. The completed work has either been published or presented at conferences. These include

- Improving the performance of evaluation services
- Institutional responses to government influence on student surveys
- Determining the quality of an end of program examination
- Designing multiple choice questions as a method for learning and assessment
- Providing academics with methods to enable the analysis of their assessments
- Are modified essay questions an effective method of assessing higher order cognitive skills in students

Administrative Work

The core duties of my work at the University have been administrative. I have focused on providing a service to meet the needs of academic staff as well as the administrative requirements of the University. My accomplishments have included

- Development, evaluation and management of the SELT system at the University of Adelaide. This is a major area utilizing significant university resources. I have managed this area successfully for 3 years. I have managed to reduce turnaround times by 90% for processing in addition to providing greater evaluation opportunities for staff at the University of Adelaide.
- Developing a Program SELT to complement the end of program CEQ (which is used by the government to allocate funds to universities). Strategically important, the program SELT provides program areas with advance notice of problems in their program with benefits to both students and the University.
- Developing a new online SELT system, which will allow staff to develop their own SELTs, use standard SELTs and retrieve their results over the last 5 years. In the future staff will be able to access data back to 1995. Staff will be able to choose whether their SELT is run online or on paper and students will use the same site to access surveys they need to complete.
- Providing external services for external institutions. Through lucrative contracts with external institutions as well as smaller jobs for other organizations, funding has been obtained to ensure that the service offered to my institution is of the highest quality.
- Providing aggregate information to the University community, so that teachers and coordinators can assess the overall impact they have on the student experience, and so the university can be competitive in the Learning and Teaching Performance Fund.
- Evaluations of teachers and courses
 - Where there are new courses or teachers struggling with their teaching as reflected by SELT results, I have made myself available to go into the classroom and assist. My input has been highly regarded and the outcomes of these interventions very positive.
- Providing evaluation services for staff within the University to support teaching such as educational change to higher degrees and to support research and staff teaching prizes, and projects funded by the DVCA&VP.
- Providing evaluation support for research such as such as ARC grants, postgraduate research projects.

Many different evaluation strategies have been used to achieve the purposes of myself and my clients including questionnaires, assessments of student knowledge and understanding and focus groups. I have formally monitored the dynamics of small and large classes using a technique I have developed and published. Surveys have been run in a class situation, as a mail out and on-line. I have a good understanding of the statistical methods which can be used to analyse the results of evaluations.

Leadership

Apart from my successful management of my vision for the Evaluation and Assessment area in CLPD, I have formed ERGA (The Education Research Group of Adelaide). I perceived a need for a cross –disciplinary educational group with a sound research ethos to develop and encourage a scholarly approach to learning at the University. With a group of like-minded colleagues, the group was formed in late 2005. To this point the group has

- Attracted funding for two highly successful conferences attracting important speakers in education from across the nation and providing an unprecedented opportunity for staff at the University of Adelaide to present and publish their educational research.
- Allowed 44 staff from the University of Adelaide to present their educational work at the conference as well as interact with educators from other institutions
- Published the first edition of the peer-reviewed journal ergo, publishing educational research. This has included articles from staff at this University
- Attracted funding for a project on examining assessment practices across disciplines
- Attracted funding for a project on using online technologies to provide scenario based teaching in science

Previous Positions

As the course coordinator for Experimental Physics I was in charge of a team of senior academics and general staff. I devised experiments and arranged teaching schedules, assessments and evaluations. At the same time I was a productive member of teams teaching other subjects, thus allowing me to learn from others as well as feeling part of a larger teaching group. As Computer Aided Learning Evaluator for the Department of Surgery, I lead a team of programmers, designers and others to achieve the goals set by my supervisor. As the IT Manager for the Medical School, I was leader of a team of IT specialists and academics designing the medical curriculum web site and leader of a small team managing and developing further educational initiatives.

Online Curriculum Manager (IT) 1999-2003

In 1999 I began work in the Medical Education Unit of the University of Adelaide. I was involved in redefining a new curriculum in the Medical School and supplementing it with Information Technology resources. The major projects I worked on in this time are

- Development, evaluation and management of the Medical Curriculum web site at the University of Adelaide. (www.curriculum.health.adelaide.edu.au). This was a major project utilizing significant faculty and university resources. I managed this project successfully for 5 years from its onset to 2003. This web site provided student timetable information, communication tools, lecture material and interactive educational aids and provided substantially better support for the MBBS course than packages such as Blackboard and WebCT. It supported special projects for students and staff and provided a set of robust curriculum administration tools. The web site is the focal point for students and educational staff and receives over a million hits a year.
- Evaluations of teaching aids such as
 - Electronic voting system
 - Virtual anatomy tools.
 - On-line lecture notes
 - Animations and other multimedia resources

Much of the satisfaction of this position was in the design and implementation of evaluation strategies for the computer programs I have written as well as seeing these results published in refereed journals. I have been instrumental in the design and implementation of these evaluation studies.

Computer Aided Learning Evaluator, designer and manager 1994-98

In 1994 I began work in the Department of Surgery of the University of Adelaide in the field of computer aided learning; an area which had interested me for some time. During my time in this position I worked on many different projects including

- **Voltaire** is a cardiology program, written in conjunction with heart specialists under the auspices of the National Heart Foundation. Voltaire is being used in the Royal Adelaide Hospital and private hospitals. It has been sold to Servier Pharmaceuticals and is now in its third printing.
- **The Health Promotion Kiosk** brings health information to the community and was funded by a Quality Audit grant from the University of Adelaide. Situated in the main foyer of the Royal Adelaide Hospital, it is

used regularly by members of the community. Response has been excellent with further modules intended for the unit as well as translation into several languages.

- **Leonardo** is a multi volume collection of more than 4000 medical images and digital video designed for use on CD or over the web, accompanied by a database.

Most of these projects were in development simultaneously, requiring judicious use of time and resources to bring them to completion. In addition they have required liaison with medical professionals both within and outside of the University to ensure accurate representation of medical material. All of these projects were been funded externally and I gained considerable skill in applying for, and obtaining, grants from both traditional and non-traditional areas.

Lecturer in Physics. 1988-93: Course Coordinator – Lecturer Level A: Experimental Physics

Responsibilities included

- Management and assessment of the third year courses Laboratory Physics A and B.
- Course design
- Manual writing
- Student supervision
- Liaising with 2nd and Honours years' coordinators to ensure a consistent approach to the subject matter.
- Design of computer interfaces for experiments
- Design of teaching software to run experiments and interact with students
- Design of new components to the courses.
- Ongoing evaluation of the experimental physics course.
- Organisation of Specialist Seminars in Physics. Speakers included respected professionals such as Prof. Paul Davies
- Liaising with external organisations including SOLA, CSIRO, Norseld and the ABC

Teaching Philosophy

I believe students have a great capacity to learn and can be successful having enrolled at university, but they will not all learn the same way and different techniques may be required to teach students similar material. This requires me to be flexible, always be looking for new ideas on how to teach and to be familiar with educational literature which may be of assistance. I understand that knowledge and understanding in any discipline can be difficult to attain. At some point in time everything we know and every skill we have, was unfamiliar, challenging and difficult to gain. I remember clearly that I didn't know things, even items which I now regard as trivial and this helps me be patient, constructive and imaginative in my teaching. I believe that regular formative assessment with feedback is the cornerstone of any learning experience and have focused my recent research efforts in this area.

I am friendly, knowledgeable in my fields and can communicate with students at a level they understand. I am open to new teaching methods and new technologies and keen to evaluate everything I do. A willingness to change educational strategies, where based on evidence and within budget is an essential characteristic and I am prepared to accept that some teaching strategies will not work.

- I expect my students to participate in their learning, work with their peers, talk to their teachers, work through problems, reflect on the work they are doing and strive for understanding
- As a lecturer, I am organised, up-to date and communicate effectively, I am aware of what the students need to learn, use assessment to drive learning, provide feedback, am consistent, am approachable and available, I strive to understand the students: their expectations, their fears and their lifestyles.
- Take student concerns seriously and remember what it was like not to know, not to understand and not being able to find a way past these barriers.

Teaching Responsibilities

I am currently running the online curriculum for the Discipline of Surgery [150 students] and teaching Physics II students in experimental physics [20-30 students]. I am effective lecturing in front of large or small classes, in either a live or online environment, and provide students with excellent teaching materials such as course notes and assessments. I have been course coordinator for Experimental Physics III and have been responsible for course design, marking, lecturing, running tutorials and evaluating courses. I am a regular lecturer for CLPD in the Teaching at University course. 20-30 students]

Evaluation of Teaching:

Student opinion is important. They may not always have the context to make valid decisions, but they are the people experiencing the course and it is important to make sure that the experience is productive and enjoyable, particularly as retention of students is so important. I evaluate my teaching using SELTs and peer evaluations. I like to experiment with different methods of teaching and evaluate the outcomes as fully as possible. I was specifically inspired by the work of Bligh [1] and McKeachie [2], who illustrated using evidence based research the effectiveness of different forms of teaching. Evidence based approaches to fields such as medicine by Trish Greenhalgh [3] and the work of members of the Open University in England have also been influential.

SELT Results for Physics Teaching

	2004 Sem2	2005 Sem1	2005 sem 2	2006 Sem 2	University Average	Average Percentage Broad Agreement	Average University %BA
1. Rate the effectiveness of this person as a university teacher	6.3	6.0	6.6	6.5	5.6	98%	83
2. Well organised	6.2	6.0	6.0	6.4	5.8	93%	88
3. Shows concern for students	6.4	6.2	6.9	6.6	5.7	99%	84
4. Enthusiasm for encouraging learning	6.5	6.3	6.8	6.5	5.7	100%	85
5. Encourages student participation	6.3	6.3	6.8	6.4	5.6	99%	80
6. Stimulates my interest in learning	5.7	5.6	6.5	6.4	5.3	92%	75
7. Gives clear explanations	6.4	6.2	6.6	6.5	5.6	99%	82

The above table clearly illustrates my ability to implement my approach to teaching. My results are consistently well above university norms and reflect the energy I put into teaching and the enjoyment I gain from it

One of the key areas where I have not performed as well is for the question "This person stimulates my interest in learning in this course".

Students learn those elements of the curriculum that are known to be directly assessed and are more concerned about grades or passing an examination than about using assessments as a learning experience. [4], but I still believe it is important to help them look at the end result, which is a command of the field and enjoyment of their chosen discipline.

Motivation however is a very complex topic. It varies according to personality, the perceived value of the material on the course as well as the method or methods being used by the teacher to facilitate learning. A number of principles of motives to learning are illustrated in the literature and these include goals and interests, creativity and natural curiosity and the innate willingness to learn [5].

My initial response therefore was to focus on one area of motivation I could influence. I brought in exciting and topical examples of work my students could expect to be doing, which was related to their current course. Although the students responded positively in class to this initiative, the SELT result did not change (from 5.7 to 5.6 in table above)

I had already enrolled in the Teaching at University course and I felt the Graduate Certificate in Higher Education would provide an opportunity to improve my skills and knowledge. The main thing learnt in this course was about reflection. It was challenging, as I learnt skills for looking at myself and my teaching with a clarity I had never before attained. In terms of practical outcomes for my teaching, I implemented a strategy where my students were split into pairs and asked to explain key concepts to each other. I circulated amongst the class, listening and correcting misconceptions and then summarised the concepts myself to reinforce their growing understanding.

The outcomes surprised me. I was aware the students were uncomfortable carrying out this form of learning, and I had explained clearly to them why I was teaching in this manner, but I was not confident in the outcomes from the survey (although I was very pleased with the learning outcomes). Their obvious acceptance is reflected in the last two SELT surveys, and in particular their interest in the course was raised to a higher level, providing good evidence for my change in teaching approach.

Student comments on my teaching illustrate the effectiveness of my teaching

- ...enthusiasm for physics and for getting concepts across to students
- ...friendliness to all students and always willing to help
- He seems to have a good knowledge of the subject and is able to see things from the students perspective

- Takes time to explain things carefully and checks to see if we understand the concepts
- XXXX allows you to work out problems yourself, instead of giving you the answers, which enables you to learn better about what's going on
- He encourages students to solve problems encountered by themselves
- Best aspect is "his concern for students to learn in a positive environment"
- "very easy to understand, approachable, knows what he's talking about but not condescending (big plus)"
- A real concern for student understanding. Wants to make sure we understand what we are doing. Very approachable as well."

Student experience surveys are but one facet of measuring teaching excellence. Review of my teaching by my peers using the University's official forms was a process I went through to further improve my teaching

The peer reviewers ranked my lecturing of a high standard. Their comments were pleasing and constructive.

Overall, how would you rate this person's effectiveness as a university teacher?

- Organised. Teaches using structured development. Authentic presenter. Humorous

Overall quality of course matter taught as informed by scholarship of teaching

- Has developed clear positions on teaching and learning. Informed by literature. Open to discussion, not easy to sway from position. Playful – takes up a position to see what happens.

Assessment of Student learning

- Integrate assessment into teaching. Responsive to feedback

Contributions to curriculum development and evaluation

- Helped in conception and detailed development. Self evaluates. Evaluates the evaluation process.

The online curriculum in the Discipline of Surgery

The only effective way of using technology is to base it on sound educational principles [6] and I make informed decisions about the education methodology to be applied to my work. I am keen on applying new technology to my teaching. The impact and effectiveness of the technological tool must be evaluated, in part because costs involved in some technological methods are very large and there needs to be evidence to support their use. I have designed medical education tools for CD and the internet [7-8]. I have also used electronic voting systems and iPods to provide greater interaction in the class and away from it. [9-10] I have used these tools in classes ranging from 15 to 150 and hundreds of students access the online and CD tools every year.

Students graduating from the MBBS course are expected to be ready to work independently in hospitals and general practices, learn specialist skills, keep themselves up-to-date with current practice, be aware of the latest breakthroughs and be receptive to changes in their professional environment. These skills cannot be obtained solely in the classroom, or from ward rounds, but require a holistic approach to the learning process combining structured study, patient contact and independent learning. Students need to be exposed to a wide range of clinical conditions, ideally in case-management situations, but changes in the pattern of patient management limit opportunities for today's medical students to learn from real-life clinical encounters: long gone are the days when patients spent substantial time in teaching hospitals and were easily accessible as 'teaching material'.

I have written software, called Medici, to run clinical scenarios for medical education to act as an adjunct to the students conventional education. Together with Assoc. Prof Peter Devitt, a full online curriculum was developed for the surgical students, complimented by a strategy which we believed would motivate students to use the material. The students were informed that the use of the program would give provide them with a sound basis for the core material they needed to understand and would provide assistance in their end of attachment examination. A diagnostic assessment was used to determine student's knowledge as they begin the course. [7-8]. This type of assessment helps provide a benchmark for measuring learning outcomes and provide students a perspective of the understanding they need to gain and how much work they need to do to achieve it.

A strong stimulus to encourage learning is some form of assessment. Traditionally this has been the end-of-course barrier examination or summative assessment as was the case here. This method governs student decisions on what

they will attempt to learn, but is “essentially passive and does not normally have immediate impact on learning” [11]. The impact of summative assessment on the learning process for students should not be underestimated and may have a negative impact on the motivation to learn for some students [12]. In addition, assessment is a key indicator of the effort students will put into assessment tasks [13], but students are capable of manipulating their study time to focus on examinations at the expense of understanding subject matter. [14] Deep learning is one of the goals of any course and “if students perceive a need to understand the material in order to successfully negotiate the assessment task, they will engage in deep learning” [15]. Good assessment should [14,16]

- “Capture sufficient study time and effort (in and out of class)
- Be spread evenly across topics and weeks
- Lead to productive learning activity (deep rather than surface learning)
- Communicate clear and high expectations.”

The Medici program and the strategy used provided all of the above, yet when the formative assessment program was evaluated it was found that very few students had used the resource, and their learning outcomes were unchanged from those students who had not been exposed to Medici. Non-SELT surveys indicated that the students regarded the resource highly, but didn't use it. In their priority system it was very low.

This was despite the fact that when I was involved in teaching students using the software tool and an electronic voting system, students were highly enthusiastic and keen to have more material provided. See SELT results below

	4 th yr Students	5 th yr students	6 th yr students
Medici helps me develop my thinking skills	6.1	6.2	6.0
Medici is useful in the classroom	6.5	5.7	5.8
I participated more in a class where EVS was used	5.8	6.1	5.9
I enjoy learning in classes where the EVS is used	5.9	6.1	6.1

The evaluation results clearly indicated a different approach was required. An investigation into the nature of feedback provided a potential solution. Feedback provided to students should have the following characteristics [14,16]

1. “Is sufficient (in frequency and detail)
2. Is provided quickly enough to be useful
3. Focuses on learning rather than marks
4. Makes sense to students
5. Is linked to assessment criteria/expected learning outcomes
6. Is received by students and attended to
7. Is acted upon to improve work and learning”

Points 6 and 7 were not being implemented despite the excellent attention, the formative assessment strategy gave to 1-4. Point 5 was deemed to be the issue. By making the link to assessment voluntary, student were downgrading the worth of the resource.

The assessment strategy was changed. More content was added and a module of 6 clinical cases was provided on a weekly basis. Each week, there was one online assessment to complete, which could be effortlessly passed, simply by completing the material in the weeks module.

This time, the results were different. 130 students accessed over 70,000 questions with comprehensive feedback over a one year period. Learning outcomes for students were higher by nearly 20% over previous years and the feedback from the students indicated that using Medici was one of the key motivators for their learning. SELT results were positive (below)

SELT results on Medici

	4 th yr Students	5 th yr students	6 th yr students
Satisfied with the quality of the Medici cases	6.1	6.3	6.1
The feedback provided assists my learning	6.3	6.2	5.9

I am motivated to learn using Medici	6.4	6.1	6.0
Medici helps me develop my thinking skills	6.1	6.2	6.0
Helps me balance study and other commitments	6.5	5.9	5.7

The key to this success is clear. A knowledge of the literature, a command of the fields required to implement a quality teaching resource for my students, responding to student comments (SELTs plus others) and acting decisively. The end result is a vastly improved learning experience for my students.

Other examples

In conjunction with Mathematics, I carried out a diagnostic evaluation of an Honours course, which resulted in significant changes to both the content and the assessment of the course. [17]

I have developed formative assessments in a variety of ways. Discussion groups, banks of multiple-choice questions, trial essays, case-based scenarios, in-class quizzes and games have all been effective strategies. [18-19] I have also had students create their own multiple-choice questions as a formative learning tool. [20] My formative assessment is spread out over the whole course to encourage consistent effort.

Summative Assessment

I have set exams and assignments and understand that there is an art associated with designed reliable and valid assessments. It is important to learn good techniques for writing exams and testing them afterward to look for weaknesses. [21-22].

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6. XXXX X, Coulson M, Falkner K, Coulson M. (ERGA application). Funding for ERGA Conference 2006. \$7,500 2006 [all applicants are equal contributors]

Internal funds obtained 1996-2003

1. High-level interactive programming., University of Adelaide Special Equipment Grant, \$4764 [co-investigator]
2. Interactive Information System for the Health Promotion Unit of the RAH., University of Adelaide \$40,000 [chief investigator]
3. Establishment and validation of continuous assessment in medical education. The introduction of objectivity into on-going assessment., University of Adelaide, \$16,500 [co-investigator]
4. An objective evaluation of the different learning styles on the computer., University of Adelaide, \$6,000 [co-investigator]
5. Computing Facilities for the Faculty of Medicine, University of Adelaide, \$90,000 [co-investigator]
6. Increasing the Utility of IT Based Resources within the Medical School., University of Adelaide, \$24,000 [co-investigator]
7. Increasing student participation in large group tutorials., University of Adelaide, \$8000 [co-investigator]
8. Creating a visual aid to curriculum creation, University of Adelaide, \$6000 [chief investigator]
9. A virtual pathology museum , University of Adelaide, \$3600 [co-investigator]
10. Enhancing staff abilities in computer aided education., University of Adelaide, \$2700 [co-investigator]
11. Do online educational materials benefit the student?, University of Adelaide, \$2300 [chief investigator]
12. A picture is worth a thousand words?, University of Adelaide, \$1500 [co-investigator]
13. An evidence-based assessment of on-line learning materials. , University of Adelaide, \$1500 [co-investigator]