

## Keynote addresses

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### **Leading and managing the development of e-learning environments: An issue of comfort or discomfort?**

**Stephen J. Marshall**

Creating or developing appropriate organisational environments and conditions to support widespread, effective use of Information and Communications Technologies (ICT) in teaching and learning has proven to be challenging for even the most generously resourced institutions. It is a complex, multi-faceted process of change requiring integrated and coherent decision-making and action on the part of ALL individuals and groups within our higher education organizations.

Experience over the last decade has shown that to achieve widespread, sustainable, and effective use of ICTs in teaching and learning across an organization, it is not good enough to rely on the efforts of local enthusiasts and processes of natural diffusion. Nor is it sufficient to provide wide ranging cash incentives; to mandate the use of ICTs in teaching and learning processes; to establish expert Centres to provide advice and technical support to individuals or organisational units; or to develop and install the complex technological infrastructure necessary to make the technology readily available to staff and students.

While each of these strategies have provided valuable impetus towards enabling individuals and groups within organizations to access and utilise ICTs in their teaching and learning processes, individually and even collectively, they fall far short of the integrated, coherent strategy that I believe experience and the research literature suggests that we need to adopt to effectively realise widespread, sustainable, and effective use of ICTs in teaching and learning across our higher education institutions.

In this paper, I will (a) identify some of the essential leadership and management challenges faced by those attempting to develop organisational environments to support the sustainable and effective use of ICTs in teaching and learning; (b) articulate a framework that might be used for leading and managing such a process; and (c) raise questions as to our individual and collective preparedness to address these challenges within higher education.

[Social Sc LT, Wed 9.00am to 9.45am]

### **ICT in higher education: An uncomfortable zone for institutes and their policies**

**Martin Valcke**

This contribution is based on an overview and analysis of ICT related innovation projects in Western European countries, with a more in-depth look at approaches in Flanders and the Netherlands. To explore the uncomfortable zone for institutes and their policies, a number of recent evaluation and monitoring studies are reviewed and commented upon. This results in an institutional policy analysis that touches upon a wide variety of variables and processes related to management, expertise, infrastructure, the primary process and conceptions. To inspire the development of a more comfortable zone, the author moves to an analysis of recent developments and initiatives. A key element that results from this analysis is the strong focus on the development of middle management expertise to foster *change management*.

[Social Sc LT, Tues 9.00am to 9.45am]

### **When beyond the comfort zone is the comfort zone**

**Duane Varan**

The advent of digital technologies is rapidly changing the ways in which people experience media characterised primarily by an increasing degree of control, choice and interaction. In this keynote presentation Professor Varan will explore how stepping out of our comfort zone as educators will often require that we enter into the comfort zone of our students, working to capitalise on new frontiers enabled through digital technologies. Professor Varan will share findings from a range of studies designed to better understand the psychology of the interactive viewer and explore their implications for new approaches to mediated education.

[Social Sc LT, Mon 9.15am to 10.00am]

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## Gold sponsor's address

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### **Changing of the guard: The impact of global learning object repositories on next generation learning delivery models**

**Grame Barty, Executive Chairman HarvestRoad**

A fundamental shift is occurring in the delivery of e-learning from higher education institutions. This is being driven by:

- A frustration with the capability of first generation course management systems in relation to maintenance and storage of content
- A real requirement to capture and manage both an institution's creation, and use of, copyrighted material
- Cooperation and competition between institutions globally to increase student and course revenues
- Increased means of content production combined by exponential demand tied to the Internet providing unfettered levels of access
- The changing skills and cognitive patterns of the next generation of learners

This paper will propose that the next most important step in e-learning delivery models will be the emergence of very large, globally oriented learning object repositories (LORs) where information will be stored, managed and exchanged in 'chunks' - on a macro level across dispersed communities of practice and on a micro level by asset and individual.

The paper will refer to the importance of standards and the relationship of standards such as SCORM to open source capabilities such as SAKAI, OKI and RELOAD. It will also show how institutions can evolve from a 'course-based teacher driven model' to an 'object-based learner driven model' using menu based course 'play lists'.

The capability to 'reach back' for legacy content as well as assembling new content independent of authoring or delivery systems will be important capabilities in any LORs success and this will be demonstrated. The paper will also discuss the role and relationship of LOR's with existing digital management systems - such as library systems, EDMS and portal management applications.

[Social Sc LT, Tues 1.30pm to 1.55pm]

## Sponsors' presentations

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### **QuickTime: The essential Digital Learning Object Tool**

#### **Stephen Atherton**

This seminar looks at the use of the cross platform standard, QuickTime, in the areas of video, streaming video, and virtual reality through case studies and demonstrations. The University of Western Australia's "iLecture" system will be examined as will case studies in engineering research (Australian Defence Force Academy), statistics teaching (University of Queensland), chemistry education (Oxford University) and streaming media in medical education (Cornell University) to name a few. The talk is primarily aimed at academic staff but will be relevant for technical staff and general staff involved in content creation. The presenter is Stephen Atherton, Higher Education Strategic Business, Apple Computer Australia.

Interested in subscribing to a monthly update on IT in higher education? To subscribe to Apple University Consortium News check <http://auc.uow.edu.au/mailman/listinfo/auc-news>

[Social Sc LT, Wed 9.45am to 10.30am]

### **Actively engaging students in learning**

#### **Sally Bateman, International Education Manager KEEpad Pty Ltd**

In order for deep learning to occur students need to be actively engaged in the learning process. Research has shown the benefits of utilising group and audience response systems in education include; encouraging participation, improving understanding, increasing retention and adding excitement and enthusiasm to traditional education and training methods. Use of the system also creates opportunities to quickly check student understanding.

*KEEpad* is a tool that allows educators to actively engage all their students in the learning process. It is easy to use technology that seamlessly adds into Microsoft *PowerPoint* and enables lecturers to ask questions and receive real time feedback from the entire class.

*KEEpad* creates a fun learning environment, helps reinforce learning, promotes class discussion and, importantly, research shows it assists in improving learning outcomes.

[Murdoch LT, Mon 10.05am to 10.30am]

### **Blackboard unplugged: Panel discussion**

#### **Bob Cupitt, Blackboard**

As institutional use of online teaching and learning products mature, Blackboard will outline their vision for the next generation of e-Education technologies in a panel format with Blackboard clients. In addition, attendees will have the opportunity to ask questions about Blackboard's e-Education strategy, as well as get a first hand account of how Blackboard is deployed and used within learning environments.

[Murdoch LT, Mon 11.00am to 11.25am]

### **Next generation learning delivery systems and 'best of breed' e-learning partnerships**

#### **Geoff Elwood, CEO Fourpoint Learning**

#### **Brought to you by Winthrop Australia**

Fourpoint Learning is a locally developed next generation Learning Delivery system that challenges the traditional view of Virtual Learning Environments. The underpinning philosophy of ease of use, modularity, compliance with Industry Standards, cross platform support, and the ability to work seamlessly with digital repositories, provides learning professionals and institutions with power and flexibility beyond existing legacy environments. Customised module development driven by clients

around the globe has produced a rapidly evolving, feature rich environment that is set to revolutionise the virtual learning market. Founder and CEO Geoff Elwood will be presenting the groups' philosophy, product roadmap and latest feature set.

[Murdoch LT, Wed 11.00am to 11.25am]

### **iLecture: An enterprise level system for delivering Internet-transmitted lectures**

#### **Michael Fardon, lead architect of the iLecture technology, UWA iLecture System**

Universities are increasingly investing in e-learning to extend their existing learning environment, to create opportunities in new markets, and to provide flexible access to learning resources. Internet streaming of rich media is a technology that emerged some years ago, providing Universities with new opportunities to enhance the way they use the e-learning environment.

The University of Western Australia has developed a fully automated system to digitally capture live lectures, and process them into formats suitable for delivery over the Internet (iLecture). iLecture represents an affordable, university-wide solution to providing online recordings to students with minimal demands on lecturers. The Internet-transmitted lectures are a valuable review tool and enable students flexible access to lectures. Since 2002, the iLecture System has been licensed to six Australian universities, including the University of Melbourne, Macquarie University and University of New South Wales.

[Arts LR 4, Tues 12.00 noon to 12.25pm]

## Full and concise presentations (in alphabetical order)

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### **Re-learning through e-learning: Changing conceptions of teaching through online experience**

**Reem Al-Mahmood & Catherine McLoughlin**

What can the duality of experience of being an online student/ online educator afford? This paper draws on recent literature on reflective practice principles of online learning and teaching to explore experiences from those who have been on both sides – online educators and online students. Educators and online course developers need to hear from student voices in order to inform online pedagogical directions, create innovations and enrich and expand on how to provide stimulating and challenging online learning environments. Educators can do so through engagement in learner roles through experiential online learning, thereby enabling a reframing/ reconceptualisation of online teaching. By listening to student experiences, allowing for a heightened sense of awareness of learner needs, educators gain insights to improve pedagogical practice. By using qualitative in depth interview techniques with 5 online educators/ students across two Australian states, the study explores the vantage points afforded by these experiences. The findings can inform how educators can provide engaging and empowering online teaching and learning environments that move beyond traditional 'comfort zones' and established pedagogies.

[Alexander LT, Mon 11.00am to 11.25am]

### **Is plagiarism more prevalent in some forms of assessment than others?**

**Lubna Sheikh Alam**

It is increasingly evident that plagiarism in assessment has become a serious problem for universities. This paper reports the results of a survey of postgraduate students in a Master of Information Technology course. The paper presents students' perceptions of plagiarism (intentional and unintentional), percentages of students plagiarising across different forms of assessment, and any correlations found between plagiarism and demographic, situational and perceptual factors. All forms of assessments are subject to plagiarism and occurrences of plagiarism vary between different forms. The paper also discusses ways of addressing plagiarism. It suggests that universities need to undertake an integrated approach that recognises and counters plagiarism at every level from school policy, through staff and student induction, assessment design, deterrence and penalties, and ongoing support. A web based online workshop on plagiarism could be made available to students. Use of plagiarism detection software combined with individual academic support appears to have a positive impact on students. Staff should design assessment tasks that prevent unintentional plagiarism.

[Social Sc LT, Tues 11.30am to 11.55am]

### **Developing a blended learning community at the University of Sydney: Broadening the comfort zone**

**Andrelyn C. Applebee, Robert A. Ellis & Stephen D. Sheely**

This paper reports on organisational initiatives undertaken at the University of Sydney as it continues to address the issues of coordinating information and communication technologies (ICT) in a devolved teaching and learning system. The thrust of the activities described in this paper are designed to make ICT in teaching and learning a ubiquitous part of the subject design and teaching process. This approach involves moving academics towards a blended learning community, broadening their traditional comfort zone through augmenting faculty academic management structures and providing a one stop website that coordinates all ICT support across the university.

[Alexander LT, Mon 3.45pm to 4.00pm]

### **Teaching design principles in software engineering**

**Jocelyn Armarego & Geoffrey G Roy**

The teaching of program design skills to novices is a core problem in software engineering education. This paper discusses the need to develop a good understanding of the fundamental computational principles and identifies some of the key design skills that should be developed by students. The paper proposes that a pseudocode based model has some useful properties in enabling these skills to develop through top down design and through progressive refinement. To demonstrate and test these ideas a pseudocode tool, *P-Coder*, has been developed. This tool provides both graphical and textual elements in an interactive tree structured model. Much of the semantics of a program can be developed graphically before it is necessary to introduce formal programming language syntax. *P-Coder* also provides capabilities to insert code segments, which, when combined with the visual model, enable complete (Java) programs to be created. *P-Coder* is not intended to be a production environment, but rather a tool for developing both knowledge of computational concepts and skill in program design. A preliminary evaluation of student results shows a clear improvement and suggests the approach is worth pursuing.

[Arts LR 4, Tues 2.00pm to 2.25pm]

### **From online enhanced to wholly online: Reflections on e-learning developments in teaching psychology**

**Christine Armatas, Dale Holt and Mary Rice**

Deakin University has determined that every undergraduate student enrolled from 2004 will undertake at least one unit wholly online, without the usual face to face teaching that is a major component in on campus study. In response to this policy, *Research methods in psychology* has been developed as a wholly online unit and offered in 2004 as one of the first wholly online units to be run in the University. The design of the unit builds on the development and use of digital media and online technologies in teaching first and second year units. This paper outlines the antecedents of the unit's design and operation, along with its current wholly online teaching and learning environment. The relationship between the use of digital resources and online features is mapped against key concepts and skills to be mastered in the unit. Distinctive student attributes to be developed in relation to the subject being offered wholly online are considered. The move to new e-learning territories of wholly online environments raises important research questions. An approach to researching wholly online teaching and learning environments in the discipline of psychology is detailed as a response to illuminating key dimensions of a significant development in e-learning in higher education.

[Fox LH, Tues 12.00 noon to 12.25pm]

### **Student moderators in online discussions**

**Bill Ashcroft and Iain McAlpine**

Online discussions can be a major aspect of learning and teaching when a course is offered entirely online. Using online discussions can lead to new considerations of the tutor's role in relation to the students. This article outlines some of the research findings regarding online discussions, and considers these in relation to an online Masters course using a problem based approach. The course makes extensive use of online discussions. In this course, students are given the task of being the online moderator for a week to encourage active participation and development of their ideas through discussion. The article includes evaluation feedback from the students.

[Fox LH, Mon 11.00am to 11.25am]

### **Teaching and learning online with wikis**

**Naomi Augar, Ruth Raitman and Wanlei Zhou**

Wikis are fully editable websites; any user can read or add content to a wiki site. This functionality means that wikis are an excellent tool for collaboration in an online environment. This paper presents wikis as a useful tool for facilitating online education. Basic wiki functionality is outlined and different

wikis are reviewed to highlight the features that make them a valuable technology for teaching and learning online. Finally, the paper discusses a wiki project underway at Deakin University. This project uses a wiki to host an icebreaker exercise which aims to facilitate ongoing interaction between members of online learning groups. Wiki projects undertaken in America are outlined and future wiki research plans are also discussed. These wiki projects illustrate how e-learning practitioners can and are moving beyond their comfort zone by using wikis to enhance the process of teaching and learning online.

[Fox LH, Tues 10.05am to 10.30am]

### **The embodiment of the online learner**

**Sián Bayne**

This paper considers the significance of embodiment – the ways in which its meaning is shifted by our immersion in the classrooms of cyberspace, and the various strands of cultural theory which can help us conceive of new ways of working with the shifted forms of embodiment learners and teachers experience when they go online. The discussion in the paper is organised into two strands. The first is concerned with the mind body split and the way in which this dualism is being challenged in contemporary theory and in the online classroom. The second focuses around the theory of the posthuman, considering the ways in which the body is 're-articulated' by our increasingly intimate relationship with the machinic, and the effect of such re-articulation on the experience of online learners. The paper draws on a review of relevant aspects of cultural theory, and on interviews undertaken with learners. It ends with a brief indication of how the two strands identified might carry through into particular pedagogical approaches.

[Murdoch LT, Mon 2.00pm to 2.25pm]

### **Investigating how learning designs can be used as a framework to incorporate learning objects**

**Sue Bennett, Lori Lockyer and Shirley Agostinho**

Much of the current research and development efforts related to learning objects focus on the concept of reuse from a technical perspective, particularly in terms of technical standards for interoperability. Yet, there is little research being conducted that investigates how learning objects can be reused from a pedagogical perspective. It is necessary to develop a deeper understanding of the processes teachers undertake to make use of learning objects in their teaching. We report the current progress of a project that is addressing this gap by investigating how tertiary teachers make use of generic learning designs as a framework for incorporating learning objects into their subjects.

[Social Sc LT, Tues 10.05am to 10.30am]

### **Professional navel gazing: Flexible learning professionals into the future**

**Jenny Bird**

Designers and developers working in Australian universities are an ill defined professional group whose role in the design and development of flexible learning programs and materials is of increasing strategic importance to their institutions. Their roles have undergone significant change over the last 10 years with the rapid and simultaneous impact of flexible learning, new technologies, internationalisation, massification and economic rationalism. This empirical study aims to describe the profession by job title and award, qualification and core activities. Results demonstrate an increasing diversity of job titles, particularly new positions related to web/online and multimedia development, a mix of academic and administrative classifications, changed core duties particularly in the areas of online learning and staff development, and some differences between various groups in the core activities in which they engage. The paper calls for the profession to step outside its comfort zone and reopen the debate about the advantages and disadvantages of professionalisation.

[Social Sc LT, Mon 11.00am to 11.25am]

### **Student reactions to online tools for learning to use the Internet as a study tool: Outside the comfort zone?**

**Carol S Bond, David Fevyer and Chris Pitt**

The Internet is a valuable source of health related information, however students are not maximising their use of this resource. A study was undertaken to see what resources were already available to help them develop the necessary skills, and to identify the elements of an Internet study guide that were of importance to the students. An extensive search of the Internet, using a variety of search terms in Google and Yahoo located numerous study support sites. Ten focus groups were held with a total of 60 students on a variety of health and social care related courses at an English university. Rather than finding what the students were looking for in an online study guide the research found that using an online support system took the majority of students outside of their comfort zone, resulting in them rejecting online support and expressing a preference for personal or hard copy support and materials. The way online materials are structured into courses is explored as a possible reason for these difficulties and a flow chart to help students is presented.

[Arts LR 4, Tues 11.30am to 11.55am]

### **Animated text: More than meets the eye?**

**George Borzyskowski**

The universal integration of computers into the environments of work and leisure has been a major factor in the increasing reliance upon imagery to communicate information of all kinds, challenging the supremacy of text as the dominant communication modality in some areas. As a consequence there is a greater emphasis on the importance of visual literacy, albeit specialised, alongside conventional literacy and numeracy as a requisite for both learning and effective functioning in the workplace. It is evident, that the sort of skills acquired from an early age for the processing of textual and numerical information, are not matched by equivalent skills for the processing of visual information, especially when encountered in unfamiliar formats. This can impede learning. This paper proposes the strategic use of animated text labels as didactic agents for directing the spatial and temporal attention of learners when introduced to unfamiliar visuals, and the capacity of such animated text labels to perform a preliminary explanatory function in addition to identification. The origin of text animation within screen based media is addressed as well as aspects of recent research into cognition and attention that can inform the use of such animations in accomplishing instructional goals.

[Social Sc LT, Mon 3.45pm to 4.00pm]

### **Visual representations: Setting contexts for learners**

**Charlotte Brack, Kristine Elliott and David Stapleton**

We have created a novel project on 'Ebola virus' for "The Virtual Laboratory" online learning environment using an imaginative visual approach to set contexts, develop research skills and enhance memory retention. The project develops the environment supporting the teaching and learning of biology at year twelve level using constructivist approaches. We have moved beyond the strategies of authentic learning used previously in the environment by incorporating a fantasy based scenario and using audio, images, and animations with text layered throughout to encourage learners to search for information. The dual modality of images and text in both delivery and activities addresses multiple levels of visual constructivism, reduces cognitive load and engages learners. Learners are introduced to the project through the fantasy scenario which they research and either develop further as a case study or devise a new imaginative context. The development of their case study is guided by themes common to all infectious diseases thereby revealing and articulating underlying principles of Immunology. Learner evaluation data indicates that setting contexts at disease and learning levels using visual representation has engaged learners, modeled strategies for searching and learning, and facilitated integration and retention of information.

[Social Sc LT, Mon 4.05pm to 4.20pm]

**Learner challenges and situated learning: Engaging students at Sydney Olympic Park**  
**Gwyn Brickell and Jan Herrington**

In this paper, a new approach to school excursions is described in the development of a School Excursion Education Program at Sydney Olympic Park. Best known as the location of the Olympic Games in 2000, the Park has a wealth of opportunities for the examination of a range of issues other than sport, such as natural environments, endangered species, pollution and toxic waste disposal, Aboriginal significance, sustainable housing, and design and technology in the built environment. This paper describes the design and development to date of an excursion program for schools based on constructivist philosophy, situated learning theory and the use of technology to create a meaningful and effective learning environment for the sustained examination of significant issues. Essentially, the paper is a case study of how place and technology can be connected within a specific learning context, and how onsite technology 'pods' and other web engagements are designed to support complex learner challenges.

[Alexander LT, Mon 10.05am to 10.30am]

**A voyage out of the comfort zone: Colonising Planet Online**

**Lee Britton and Christopher K. Morgan**

Information and communication technology for use in the higher education arena has been progressively introduced in recent years. While some academics have actively welcomed this additional layer of teaching and learning opportunity, others have been more reluctant to incorporate this new dimension into their practice. We all know it can be threatening to be asked to move out of our 'comfort zone', and for some academics this comfort zone has been their familiar but traditional teaching methods. This paper reports on one approach to staff development that was used both to expose low users to the added educational value that can be gained by skilful use of technology and to develop the knowledge and skills needed to realise the potentials offered by technology. The approach, structured around a science fiction theme, involved a journey of discovery to Planet Online.

[Social Sc LT, Tues 3.30pm to 3.45pm]

**Are we comfortable yet? Developing a community of practice with PhD students at the University of Melbourne**

**Claire Brooks and Jeanette Fyffe**

The development and initial implementation of a peer support network and online course for postgraduate (research doctoral) students at The University of Melbourne is aimed at increasing the success of these students in achieving confirmation of their candidature (the first formal PhD milestone) by enabling them to have ready access to skills tutorials, resources and ideas. The provision of an online community of practice environment with opportunities to collaborate, interact and form supportive networks is intended to support them in the transition from conventional learning modes into a community of independent learners, reflective researchers and practitioners. The paper describes the development of an innovative online course for postgraduate students at the University of Melbourne and suggests some possible directions for future development. It reports on the initial delivery of the courseware.

[Murdoch LT, Mon 3.45pm to 4.00pm]

**Modern methods for traditional tasks: Developing an electronic version of student fieldwork assessment at The University of Queensland**

**Wendy Chalmers, Paul Smith and Katie Ward**

Fieldwork placements are an integral part of many professional tertiary programmes. At The University of Queensland, Occupational Therapy students undertake block fieldwork affiliations off campus at a wide range of sites as part of their studies. Students' fieldwork performance has traditionally been

assessed using a hard copy format of the Student Placement Evaluation Form (SPEF), which is posted to the university on completion by the clinical supervisor.

This project aimed to develop an electronic version of the UQ Occupational Therapy Student Placement Evaluation Form (SPEF), to allow the assessment to be completed and returned in an on line format. Practitioners had become very comfortable with using the existing print based form so in order to encourage and assist users to extend beyond their comfort zones, numerous steps were taken to ease the learning process including incorporating the existing page layout, consistent colour coding, considerable user instruction, testing and software enhancement cycles.

Additionally, the e-version of the SPEF aimed to provide a range of benefits such as on screen assistance in the form of instructions, roll overs and feedback to supervisors, increased accuracy, faster completion, cost savings to the School, up to date design, improved security and confidential and anonymous storage of fieldwork results for potential future research.

[Alexander LT, Tues 3.50pm to 4.05pm]

**Differences in the quality of learning outcomes in a F2F blended versus wholly online course**

**Nian-Shing Chen and Craig Zimitat**

Many researchers have focused on the question of whether or not there is a difference in learning effectiveness between online and on campus courses. Using the SOLO taxonomy, we explore the quality of learning outcomes of students enrolled in "Computer Network and Internet" classes offered by an institution in wholly online and face to face (blended) learning modes. Students enrolled in the F2F course made much less use of the e-learning resources than those in the virtual course. Although there were significant differences between the two classes with respect to pre-test scores, at the end of the semester, there was no significant difference in post test scores or SOLO ranking. This is not to say that the two classes resulted in the same individual improvement in learning outcomes. This methodology, if adapted to include more assessment items and larger cohorts of students might be a useful model for evaluating the pedagogical effectiveness of various e-learning courses.

[Murdoch LT, Wed 2.20pm to 2.35pm]

**Fun and games with mobile phones: SMS messaging in microeconomics experiments**

**Stephen L. Cheung**

This paper details the application of SMS messaging to facilitate 'classroom experiments' in microeconomics classes. Laboratory style experiments and simulations have long been used for teaching and learning in many disciplines, however classroom experiments in economics have a feature that distinguishes them from their counterparts in many other disciplines. This is that students participate in dual roles as both experimental subjects and as researchers in analysing the outcomes of an experiment. Good experimental designs should thus support student learning with feedback at both levels. In the past, this was done most effectively by conducting experiments in fully networked laboratories. However in view of the cost of developing fully computerised experiments, paper based designs have remained prevalent, even though these are cumbersome and time consuming to conduct. By using SMS as a response medium, the limitations of paper based experiments are overcome without incurring the costs of full computerisation. Individual feedback is delivered by return messaging, while aggregate results are summarised in automated charts and tables. This makes it possible to conduct classroom experiments in large classes in lecture halls.

[Fox LH, Tues 3.30pm to 3.45pm]

**Applying the ISO 9126 model to the evaluation of an e-learning system**

**Bee Bee Chua and Laurel Evelyn Dyson**

Despite the widespread use of e-learning systems and the considerable investment in purchasing or developing them in house, there is no consensus on a standard framework for evaluating system quality. This paper proposes the ISO 9126 Quality Model as a useful tool for evaluating such systems,

particularly for teachers and educational administrators. The authors demonstrate the validity of the model in a case study in which they apply it to a commonly available e-learning system and show how it can be used to detect design flaws. It is proposed that the metric would be applicable to other e-learning systems and could be used as the basis for a comparison to inform purchase decisions.  
[Murdoch LT, Wed 2.40pm to 2.55pm]

### **I can't understand why I didn't pass: Scaffolding student activities**

**Barnard Clarkson and Chris Brook**

This paper presents a critical analysis of the multi-semester attempt to improve a second year unit in authoring within a multimedia course. The unit has a reputation for being difficult, has a significant failure rate and multiple students repeat the unit before passing it. Based on the authors' previous success implementing more authentic activities in a first year unit, this represents the first of two articles describing two planned stages of increased application of the principles of scaffolding. It was our judgement, supported by a literature review, that judicious application of the constructivist principles of scaffolding in particular were going to be a fruitful approach and that these were critical to improving the previous levels of student satisfaction and performance. The reasons for this judgement and the planned solution are presented, as well as a summary protocol for assessing the likely changes.  
[Murdoch LT, Mon 4.05pm to 4.20pm]

### **Investigating online learning environments**

**John Clayton**

Increasingly the perceived benefits of information stored in a digital format are being exploited. The sophistication and ease of supporting web browsers, the creation of internet search engines and the advancing computer skills of students' mean, educational institutions at all levels are using the Internet and Intranets to supplement classroom instruction, to give learners the ability to connect to information (instructional and other resources) and to deliver learning experiences. This paper will focus on the concepts and procedures used in the development of an online learning environment perceptual measure, the Online Learning Environment Survey (OLLES). It is envisaged this instrument will inform educationalists of the effectiveness of tactics and strategies they are employing in e-environments.  
[Murdoch LT, Tues 4.30pm to 4.45pm]

### **Interactive QuickTime: Developing and evaluating multimedia learning objects to enhance both face to face and distance e-learning environments**

**Thomas Cochrane**

This paper discusses the application of learning objects in supporting the teaching of principles of Audio Engineering - a subject traditionally taught face to face utilising specialised audio equipment. It will demonstrate how creating interactive multimedia learning objects can enhance traditional teaching methods - moving beyond the 'comfort zone', and potentially providing virtual learning environments for online delivery. The paper will also focus upon the application of the multimedia architecture 'QuickTime' - which was chosen because of its cross platform capability, multi platform delivery and scalability (Internet, CDROM, Hard drive...), ease of authoring, high level of interactivity possible, and excellent audio capabilities. The insights gained from developing and evaluating several interactive learning objects will be highlighted.  
[Murdoch LT, Wed 12 noon to 12.25pm]

### **Electronic course content at The University of Western Australia**

**Allison Coleman, Chia Siong (Justin) Loh, Gang (Richard) Cao, and Victoria Mallinckrodt**

Literature suggests that electronic course content helps current students learn and helps recruit potential students. This comprehensive study reviewed all units, over one thousand, on offer at The University of Western Australia (UWA) in May 2004 to determine online presence, added value to students and

marketing implications. The diffusion of innovations theory helped explain the results such as that 61% of all available units at UWA had an online presence, or 80% of all undergraduate units and only 37% of all postgraduate units.

Given the marketing implications of publicly accessible Web sites over password protected sites or a central database of all unit information, this study suggests public unit Web sites are an effective marketing tool, particularly towards international and postgraduate students. Based on the annual income of UWA, marketing initiatives should focus on these prospective students.

[Fox LH, Mon 10.05am to 10.30am]

### **Mental faculty: The ascendance of writing in online management education**

**Andrew Creed and Don Swanson**

A qualitative study of online management education and the role of writing as an indicative measure of thinking and learning. Established educational models, such as Dale's Cone of Experience, are expanded and redeveloped to illustrate the central role of writing as a critical thinking process which appears to be increasing, rather than decreasing, with the advent of online multimedia technology. In an environment of increasing reliance on audiovisual stimulus in online education, the authors contend that tertiary educators may witness an ascendance or re-emergence of writing as central to the academic experience. This may be both supply and demand driven. Drawing on a study of two undergraduate units in the Bachelor of Commerce and applying hermeneutics to develop challenging insights, the authors present a case for educators to remain conversant with the art of teaching writing, and to promote writing to improve educational outcomes.

[Murdoch LT, Tues 3.30pm to 3.45pm]

### **Beyond learning objects: Towards learning beans**

**Fintan Culwin**

Learning objects, in common with other instructional media, are relatively expensive to produce; yet seem to have limited suitability for reuse in different situations. The 'object' aspect of learning objects is borrowed from the domain of object oriented programming. Within this domain there are concepts that extend the notion and utility of object. One of these is the concept of a bean, a bean is a packaged object that is able to semi-automatically install itself into different scenarios. This paper attempts, using an example from the author's own domain, to enumerate a set of design principles that will enhance the possibility of successful reuse of objects. In doing this the learning object will have taken on some bean characteristics and so have started to become a learning bean.

[Alexander LT, Mon 1.30pm to 1.55pm]

### **A classification scheme for learner-computer interaction**

**Barney Dalgarno**

Efforts are underway to develop learning resource repositories to allow reuse of learning resources. However, a barrier to the effective reuse of such resources is the lack of ability to easily locate resources appropriate for a particular learning situation within these repositories. Various metadata standards have been proposed to allow the characteristics of learning resources to be described and consequently to allow effective searching. However, it is generally accepted that these standards do not provide enough detail about the pedagogical aspects of the way in which a particular learning object is intended to be used. It is argued in this paper that the learner computer interactions potentially facilitated by the resource are an important element of a pedagogical description. Consequently, this paper proposes a classification scheme for learner computer interaction, suitable for inclusion within learning objects standards. The classification scheme includes three dimensions: cognitive task, input technique and system response.

[Alexander LT, Mon 2.00pm to 2.25pm]

### **Law school of the air: An example of adaptive technology in legal education**

**Meredith Day and Jennifer Evans**

Charles Darwin University (CDU) is unique in having the only law school in Australia whose distance program does not require a residential component. A key and innovative feature in teaching law externally at this regional and remote university is the use of web based audio conferencing to conduct tutorials. This paper is an exploratory reflection on the implementation of this educational technology. It describes the background to the introduction of the technology, how it works and practical experience to date. Within the online learning context and the place and value of synchronous and asynchronous components, the authors conclude that there is a need for further research into the effectiveness of the media and teaching methods being employed. This evidence will then be able to inform decisions about the future design of the Law School's external program.

[Alexander LT, Mon 4.25pm to 4.40pm]

### **Reactions to online learning from novice students in two distinct programs**

**Kathryn Dixon and Lina Pelliccione**

Developments in information and communication technologies (ICT) have been rapid in recent years and have promised improved education and training to an increasingly diverse cohort of students. While it is increasingly important for universities to implement a growing array of online courses in order to remain economically competitive, questions remain regarding pedagogical issues, economic costs, philosophical issues, policy issues and personal issues such as student preference for online versus face to face delivery. This paper reports on an investigation which aimed to provide a greater understanding of online learning through the eyes of higher education students in two very distinct courses (undergraduate and postgraduate). An instrument was designed to gather data on the students' prior experience and perceptions of online learning environments. The findings revealed that students are entering the University as technically competent and confident people who expect to utilise technology in their learning environment. Students in both groups indicated that the most important feature of the opportunity to work online was the flexibility this approach allowed in terms of being able to study in their own time and in other environments such as home. They also identified that this mode of delivery enabled them to enhance their learning.

[Arts LR 4, Mon 3.45pm to 4.00pm]

### **The design of a distributed learning system to support a transnational learning centre network**

**Peter Evans**

This paper starts by highlighting increasing levels of multi-site transnational education, increasing acknowledgement of the importance of students learning from other students; and the increasing importance of making strong quality statements about educational processes and outcomes. The paper then describes how a Distributed Learning System (DLS) could support efficient, high quality educational provision in a multi-site educational business based on discrete learning centres. The presentation will include evidence of the operation of the NextEd DLS from studies conducted in Australia and overseas, exploration of several scenarios exemplifying the way a DLS can support Quality Assurance in a multi-site transnational educational business and demonstration of the NextEd Distributed Learning System (DLS).

[Fox LH, Wed 2.00pm to 2.15pm]

### **Communication dynamics: Discussion boards, weblogs and the development of communities of inquiry in online learning environments**

**James Farmer**

Online learning environments (OLEs) are now critical to teaching and learning across Australian higher education. Their influence impacts on the availability of content, the design of courses and, perhaps most pedagogically significantly, the nature of communication. The discussion board is the ubiquitous

communication tool within these OLEs and hence significantly shapes the kind of communication that takes place. In light of this, the degree to which a successful community of inquiry can be facilitated through the use of discussion boards is examined and compared to the possibilities afforded by weblogs in the same role. Weblogs, it is argued, offer new opportunities in the development of social, cognitive and teacher presence online and should be considered in the development of or alongside established OLEs.

[Fox LH, Mon 11.30am to 11.55am]

### **Performing beyond the comfort zone: Giving a voice to online communication**

**Uschi Felix**

The difficulty of catering for the development of oral production skills has long been deplored in distance language teaching (Abrioux, 1991; Williams & Sharma 1988), and not much has changed since these observations were made. Oral activities are still conspicuously absent from online offerings, and students' complaints about this usually head the list of disadvantages associated with Web-based language learning (Felix, 2001). However, during the last few years practitioners have begun to incorporate sophisticated applications in the form of voiced bulletin boards (Wimba), voiced chats (Traveler) and audiographics (Lyceum). This paper discusses what these applications have to offer in the context of creating meaningful constructivist activities in distance education and their potential role in addressing the fundamental problem of performance anxiety in language learning.

[Fox LH, Mon 12 noon to 12.25pm]

### **Online classroom simulation: The next wave for pre-service teacher education?**

**Brian Ferry, Lisa Kervin, Brian Cambourne, Jan Turbill, Sarah Puglisi, David Jonassen and John Hedberg**

Pre-service teacher education has been the centre of much debate in recent times as research consistently shows that traditional programs are not adequately preparing beginning teachers for the reality of classrooms. This paper describes the rationale for the development of a simulation to support teacher education, we report of specific design features in our initial prototype version of the software and report on our research into its initial use by pre-service teachers.

The prototype simulation allows the user to take on the role of the teacher of a simulated Kindergarten classroom (ages 5 to 6 years). During the simulation the user makes decisions about organising the lesson, classroom management, and responses to individual students. The user can monitor and track the progress of three targeted students throughout the course of the simulation. Embedded tools serve as a "decision assistant" and a "thinking space" are used in order to plan and justify new decisions, and to reflect upon the consequences of previous decisions.

[Fox LH, Mon 1.30pm to 1.55pm]

### **Roles in support of teaching and learning**

**Marty Fletcher**

This paper re-views recent literature on the roles of practitioners employed to support teaching and learning within institutions of higher education. These practitioners are expected to support the adoption of Internet technologies and quality teaching and learning outcomes, primarily through instructional design and academic development services. The literature identifies some common approaches as well as some common problems. Some problems emerge because of the uncomfortable nexus between "academic" and "managerial" values and cultures. Future research to understand these problems is suggested.

[Social Sc LT, Mon 2.30pm to 2.55pm]

### **CrimPro: Teaching criminal procedure using a video recorded dramatised case study, interviews and WebCT**

**Stuart Fletcher, Mark A. Nolan and Simon Bronitt**

In Semester 1 2004, Criminal Law and Procedure teaching staff at The Australian National University (ANU) designed and delivered an online self learning module on criminal procedure ("CrimPro"). The module consisted of a DVD and companion WebCT content module provided to each of 240 students enrolled in this compulsory course. The DVD contained a video recording of criminal pre-trial and trial procedure and 26 questions answered by prosecutors or a legal aid solicitor. Students studied the DVD, other documentaries produced by the ABC, and the WebCT material (case law, legislation, and secondary material) during two self study weeks. During this period, students participated in two tutorials. It was indicated to the students that there would be a compulsory problem based question on the final exam. The challenges of producing such a module and its impact are discussed.

[Murdoch LT, Mon 4.25pm to 4.40pm]

### **SARS epidemic: Teachers' experiences using ICTs**

**Robert Fox**

In 2003, the Severe Acute Respiratory Syndrome or SARS spread rapidly via international air travel from China to many cities across the world, resulting in over 8000 cases of infections and 774 deaths. In Hong Kong, as the virus invaded the community so did fear. The government put in place measures to help the public guard against the virus, one of which was to close all schools and universities. 1302 schools were closed. 1,000,000 children stayed at home and 50,600 teachers were faced with the challenge of using digital technology to provide an education that would reach beyond school walls into the homes and computers of Hong Kong students. Teachers had to re-think their teaching strategies and provide their students with new and different opportunities to work through curriculum requirements. SARS provided a catalyst for intense use of ICT in ways which had not been anticipated or prepared for. The plunge into ICT was a voyage of exciting discovery for some and frustration for others. Either way it had an impact on subsequent perceptions of the potential and shortcomings of ICT in education in Hong Kong. This paper focuses on teachers' perspectives of the role played by digital technology to meet the challenges faced by Hong Kong educators.

[Murdoch LT, Wed 1.30pm to 1.55pm]

### **Beyond constructivism: An ecological approach to e-learning**

**Stanley Frielick**

The last four decades of the 20th century saw the growth of ecological perspectives across the disciplines. This period also saw the rapid penetration of computing and information technology into every sphere of human activity, culminating with the internet and digital convergence of all media. The juxtaposition of an emergent ecological philosophy together with the information technology explosion poses some fascinating issues for education. There are particular implications for the fashionable notions of constructivist and student centred approaches to learning, which constitute a zone of comfortable dogma. In this presentation I propose an ecological approach to e-learning that goes beyond the comfort zone of constructivism.

The key idea is that teaching/learning is an ecosystemic process of transforming information into knowledge, in which teacher, subject and student relationships are embedded or situated in a context where complex interacting influences shape the quality of learning outcomes. This perspective ventures into a new ecology of cognition and learning known as enactivism. It raises the question: Can e-learning provide an effective substitute for the embedded contextual relationships that characterise authentic and deep learning environments? In other words, can virtual or tele-presence ever be a complete replication of embodied, ecological presence?

[Alexander LT, Mon 4.45pm to 5.00pm]

### **Management of e-learning within a university setting through partnership with industry**

**Jeremy Gauder, Allan Christie and James Strong**

Increasingly, learning management systems such as WebCT are being regarded by the university community as mission critical enterprise level applications. Australian Catholic University (ACU National) is no different. What does set ACU National apart is the approach taken to managing the WebCT LMS. A strategic decision was taken at the outset to partner with industry to achieve a robust and reliable system that would scale rapidly and still be very cost effective. The end result has been that this outsourcing arrangement has been one of the smoothest and most successful projects ever undertaken by the university. It has allowed the staff within ACU National to "concentrate on what we do best" - quality education and training.

[Murdoch LT, Tues 3.50pm to 4.05pm]

### **Patterns, pattern languages and educational design**

**Peter Goodyear**

This paper introduces design patterns and pattern languages as conceptual tools to support educational design in the context of networked learning. The patterns-based approach has origins in the work of the architect and mathematician Christopher Alexander. More recently, others have developed ideas about the use of patterns in software engineering, pedagogy and online learning. This paper goes back to Alexander's work and rediscovers some neglected aspects of the approach, that can be particularly helpful in encoding, sharing and using knowledge for educational design.

[Murdoch LT, Tues 12.00 noon to 12.25pm]

### **Towards active learning management systems**

**Igor T. Hawryszkiewicz**

The paper describes new trends in learning and ways to support them using information technology. It makes a distinction between active and passive learning management systems (LMS). It defines passive LMS as those whose learning plans are clearly defined by instructors, and where students follow these learning plans precisely. Active LMS on the other hand can adapt to learner defined goals by using learning plans adapted to learner goals. A number of services must be provided by active LMS. These include services to define learning plans and actively construct workspaces. Services to manage such workspaces are also needed. Software agents are proposed as one way to provide such services and some such agents are described.

[Social Sc LT, Wed 1.30pm to 1.55pm]

### **Encouraging reflective learning: An online challenge**

**Kate Henderson, Ksenija Napan & Sylila Monteiro**

The purpose of this qualitative study is to examine the application of reflective learning journals online. It evaluates the effectiveness of reflective learning online using a five point level reflection scale. The purpose of applying reflective journals was to develop critical thinking, help students to integrate theory, practice and experience and to relate presented theoretical knowledge to real life situations. As a consequence, students gained deeper understanding of the material learnt, managed to contextualise it and developed meaningful professional relationships with their teacher.

[Fox LH, Mon 4.25pm to 4.40pm]

### **Changing practice: An exercise in curriculum development of innovative teaching in construction technology**

**James Henri, Richard Frewer, Alex Amato, Ruffina Thilakarathne & Sue Trinidad**

Evaluations suggest that, within construction related professional courses, technical aspects are the most difficult to teach. This is particularly evident in the teaching of architectural students as many fail to make the link between Construction Technology and the main thrust of architectural education: the Design Studio. The teaching of Construction Technology has, until now, been very much an instructor



centred, didactic exercise with little interaction among students or between students. In sharp contrast, Design Studio is dependent on the visual and graphical processes and occurs in settings where students interact informally with their peers and design tutors. If Design Studio can be managed in a student centred and hands on environment, why can't courses in Construction Technology / Tectonics be delivered in a similar atmosphere? This was the challenge faced by the project team as they undertook a project in changing practice through innovative teaching in Construction Technology at The University of Hong Kong. This paper reports on the process and progress of this project where there has been an attempt to shift the pedagogical practices in Tectonics. Changes in students' learning of Tectonics, the issues associated with collaboration between instructors and students, between instructors & instructors and across departments are discussed.

[Fox LH, Mon 3.45pm to 4.00pm]

### **Story telling and retelling as narrative inquiry in cyber learning environments**

**Heeok Heo**

The purpose of this study is to investigate story telling and retelling as a learning strategy to facilitate meaningful learning on environmental education in cyberspace. Because story telling is a way of making meaning for the individual on social life, it can build a richer context through which learners can enhance environmental ethics indirectly. This study discusses the development of a cyber learning environment via computer networks, which supports learners in understanding the natural world and helps them build environmental awareness through storytelling at the elementary level. The project was designed for facilitating narrative inquiry with individual and collaborative learning through online activities. From the theoretical and practical review, this study suggests design strategies for building cyber learning environment through story telling.

[Murdoch LT, Tues 4.10pm to 4.25pm]

### **University to work transition: Implications for the evaluation and design of online communities of practice**

**Anthony Herrington and Jan Herrington**

Of all the professions, it could be argued that the transition from university to work is most difficult and problematic for teachers. In this paper, we argue that the separation of university training and school placement has caused many problems for the induction of beginning teachers, as attested by soaring attrition rates in the first five years of teaching, in many countries throughout the world. We describe the lessons that can be learned by examining theoretical perspectives associated with the apprenticeship system. Two theoretically derived constructs are highlighted: cognitive apprenticeships and legitimate peripheral participation. The implications these theories hold for the design of online communities of practice for beginning teachers is explored in relation to the amelioration of professional isolation. The paper describes in-progress research on the capability of the internet to provide professional support, together with examples of successful online communities of practice.

[Fox LH, Tues 2.00pm to 2.25pm]

### **Courseware design and development program: Providing professional development and project experience**

**David Hirst, Claire Brooks and Matthew Riddle**

The Courseware Design and Development Program enables academics to participate in a program that integrates a major curriculum development project along with professional development. In its short history, the Courseware Design and Development Program has demonstrated itself to be a sustainable model. It is a model that fulfils a role of encouraging innovation in teaching and learning using technology. The integration of professional development and project development seems to appeal to otherwise busy academics as there are concrete goals and positive outcomes.

[Social Sc LT, Tues 3.50pm to 4.05pm]

### **A tale of two cities: a study on the satisfaction of asynchronous e-learning systems in two Australian universities**

**Nadira Hisham, Paul Campton & Des FitzGerald**

The aim of this paper is to present a critical analysis of the satisfaction of first year Information Systems students with asynchronous e-learning systems at the University of Tasmania and the University of Adelaide. It measures whether factors such as content, learner interface, feedback and assessment, personalisation, learning community and access affect students' satisfaction with asynchronous e-learning systems. This paper also compares whether there is any difference in satisfaction with the different systems between the two universities. It found that there is no difference in satisfaction between the different asynchronous e-learning systems used in the two universities but found that factors such as content, personalised feedback, interface and learning community were significantly related to students' satisfaction with asynchronous e-learning systems. These findings may influence how lecturers and designers utilise asynchronous e-learning systems for first year University students. Well structured quality content that is presented in an easy to understand format along with receiving personalised feedback on their progress are important elements of effective e-learning. Coupled with these factors is the need to learn in a community and the ability to select resources from the asynchronous e-learning system to suit their personal needs.

[Fox LH, Mon 4.45pm to 5.00pm]

### **From the comforts of print to the possibilities of digital media: Leading the way in teaching political leadership in a Faculty of Arts**

**Dale Holt, Siew Mee Barton and Greg Barton**

Since its inception, Deakin University has been committed to the delivery of innovative, high quality course materials to its off campus students. Until recently these packages were predominantly print based, although augmented with audio-visual materials delivered in cassette format. Ironically, with the advent of information and communications technologies (ICT), and some select computer assisted learning and multimedia packages, there was an overall decline in the use of audio and video as important means of enhancing learning. Like many other universities, Deakin has moved to a strong, centralised approach to the provision of its digital and online corporate technology environment. With investment in these technologies has come a renewed interest in the ways in which text and audio-visual materials in digital form can enhance students' learning experiences. Moreover, the ways in which a variety of digital media supported by online developments can create new models and approaches to teaching/learning has figured prominently. This paper presents a case study of how this challenge has been taken up in a unit, *Political Leadership*, in the Faculty of Arts. The academic teacher's intentions in moving to a completely digital approach are examined along with students' experiences of learning in the subject. Issues are considered from the experience.

[Arts LR 4, Tues 11.00am to 11.25am]

### **Creating a learning community of postgraduate nurses through online discussion**

**Michelle Honey, Cathy Gunn and Nicola North**

This paper considers the process of developing a virtual learning community amongst a diverse group of postgraduate nurses, inexperienced with technology and online learning. Strategies used to promote the creation of the community are described and evidence of the educational and professional benefits is presented using data from students and teacher.

[Fox LH, Mon 2.00pm to 2.25pm]

### **Using SMS as a way of providing connection and community for first year students**

**Louise Horstmanshof**

Technology provides one means of meeting the challenge of providing for frequent and meaningful interaction amongst students and staff which underpins students' feelings of being valued, leading to deeper and more meaningful engagement university studies (Pascarella & Terenzini, 1991). The

challenge lies in providing for interaction in an environment where students and casual academic staff are spending less time on campus as a result of busy and complex lives. This paper relates the experiences of one lecturer/tutor using texting to stay in contact with her students and how this contact has supported and encouraged students to persist. It also discusses some of the implications for using mobile telephony to provide connection and community for first year students in higher education.

[Fox LH, Tues 3.50pm to 4.05pm]

### **Learners as producers: Using project based learning to enhance meaningful learning through digital video production**

**Vincent H.K. Hung, Mike Keppell and Morris S.Y. Jong**

This paper discusses an initiative that utilised a combination of “Project based Learning” and a “Learning with Technology” approach. Project based learning emphasises group work and knowledge construction whereas learning with technology emphasises using technology as a tool to promote thinking. A Digital Video (DV) Camp project was organised at the Hong Kong Institute of Education with twenty teacher education students to explore how technology could enhance meaningful learning in a project based learning environment. The objective of the project was to investigate how students could learn with Digital Video technology through collaborative project based learning activities. The paper discusses how students utilised DV technology in small groups to produce two DV outputs – a one minute introduction of their group members and a three minute DV on a specific topic. Student feedback and evaluation was positive in relation to the approach and feedback was used to reorganise another DV camp in the subsequent year. Implications for the approach are discussed.

[Fox LH, Wed 11.30am to 11.55am]

### **The educational possibilities of dis-comfort**

**Lesley Instone**

This paper draws on contemporary theory on technological change to problematise the notion of a ‘comfort zone’ for educational technology. By placing technology in a wider context I question discourses that assume that educational change is driven by progressive technological advance, and which posit a distinct divide between online and face to face education. I also challenge ways of thinking about technology that render invisible the social and cultural dimensions of educational technology practice. Drawing on this contextual analysis, the paper then explores the practical possibilities of moving outside the comfort zone by proposing an alternative engagement with technology for educational technologists, that of creative dis-comfort.

[Alexander LT, Mon 2.30pm to 2.55pm]

### **Changing schools through exploring innovative pedagogical practices using ICTs**

**Ip Pui Shum and Robert Fox**

This paper explores innovative pedagogical practices through the use of information and communication technologies (ICTs) and school readiness to change. There is considerable public rhetoric, which declares that the use of ICTs is a key lever for educational reform and school change (eg Lankshear et al., 2000; EMB, 2004). Educational institutions are required to implement the reform agendas developed by governments and teachers are challenged to make full use of ICTs to improve student learning opportunities (Cuban, 2001). Different institutions address the reform agendas in different ways and with differing levels of success. This paper examines a series of case studies selected from Module 2 of the Second Information Technology in Education Studies (SITES M2), an international research project, and proposes a framework that locates individual school readiness for innovation and change. The framework identifies four main types of change and applies this framework to individual schools. The researchers propose that applying this framework to educational institutions may help them locate where they are in terms of their readiness to take up various forms of innovative practices using ICTs and therefore what factors should be considered in the planning to assist the school to progress towards their next stated goals.

[Fox LH, Wed 11.00am to 11.25am]

### **Migrating to a new institution-wide learning management system: Challenges for staff development**

**Kel Jackson and Nic D’Alessandro**

This paper outlines the planning and development of a new staff development package to facilitate the implementation of WebCT Vista at the University of Tasmania. It explores the issues and challenges that change presents as the University migrates from the ‘comfort zone’ of WebCT Campus Edition 3.8. The change has provided the opportunity to reappraise our staff development and support activities for online teaching and learning, and to take a closer look at the climate in which that staff development takes place and the implications that this has for planning and future development. What has emerged is a flexible suite of inter-related but relatively independent resources and staff development activities that can be adapted to particular end user needs and circumstances and utilised by a range of staff development providers – at both central and local (school/faculty) level.

[Social Sc LT, Mon 11.30am to 11.55am]

### **Ubiquitous learning environment: An adaptive teaching system using ubiquitous technology**

**Vicki Jones and Jun H. Jo**

Education has undergone major changes in recent years, with the development of digital information transfer, storage and communication methods having a significant effect. This development has allowed for access to global communications and the number of resources available to today’s students at all levels of schooling. After the initial impact of computers and their applications in education, the introduction of e-learning and m-learning epitomised the constant transformations that were occurring in education. Now, the assimilation of ubiquitous computing in education marks another great step forward, with Ubiquitous Learning (u-learning) emerging through the concept of ubiquitous computing. It is reported to be both pervasive and persistent, allowing students to access education flexibly, calmly and seamlessly. U-learning has the potential to revolutionise education and remove many of the physical constraints of traditional learning. Furthermore, the integration of adaptive learning with ubiquitous computing and u-learning may offer great innovation in the delivery of education, allowing for personalisation and customisation to student needs.

[Murdoch LT, Tues 2.00pm to 2.25pm]

### **More sense from audit trails: Exploratory sequential data analysis**

**Terry S. Judd and Gregor E. Kennedy**

This paper introduces the use of exploratory sequential data analysis (ESDA) to detect, quantify and correlate patterns within audit trail data. We describe four sequence analysis techniques and use them to analyse data from 34 students’ attempts at an interactive drag and drop task. Using a model sequence of events based on the task’s underlying educational design as reference, we employed these techniques to: (i) calculate an ‘average’ sequence of events based on individual user sequences, (ii) characterise individual sequences in terms of their similarity to the design model, (iii) identify common partial sequences within individual sequences, and (iv) characterise transitions between two disparate actions within the task. We then used the results of these analyses to explore why most students failed to complete all components of the task. We suggest that it was not because the task was too long or that it lacked challenge but that students intentionally and selectively ignored certain non-key steps in the task. It is our contention that ESDA techniques, in conjunction with judiciously collected audit trail data, represent a powerful and compelling tool for educational designers and researchers.

[Alexander LT, Tues 11.30am to 11.55am]

### **Pushing the collaborative envelope: A virtual classroom for clinical practice**

**Sheila Kavanagh, Judi Baron and Allan Carrington**

In an era of evidence based practice it is appropriate that nurses working in the speciality area of burns have postgraduate education qualifications. This education needs to combine knowledge acquisition and skill development within the context of the local clinical environment. To meet the interactive requirements for delivery of the Graduate Diploma in Burns Nursing, it was decided that the best solution was the use of synchronous e-learning also known as live e-learning or virtual classroom. Using live online tutorials in a virtual classroom, the clinical lecturer / expert clinician are able to provide students enrolled in this program with a unique opportunity to interact. Students are able to discuss clinical protocols, issues and solutions in an environment previously only found at Burn Care conferences. Multi media materials such as video footage add visual context to the information being taught / discussed.

The use of the virtual classroom has facilitated the delivery of knowledge and skill development within the context of the local clinical environment. The virtual classroom framework and tools reflect contemporary practice and have enabled the learning expectations of engagement, informative content and relevance to be exceeded in a cost effective and efficient manner.

[Alexander LT, Tues 11.00am to 11.25am. Video conference]

### **Increasing opportunities for learning: Mobile graphing**

**David M. Kennedy, Douglas R. Vogel and Tomson Xu**

Considerable research has indicated the importance of having a sound pedagogical framework in place for the creation of learning objects which can support student learning, particularly higher order thinking skills. This paper describes the evolution of a learning object that has been in use for nearly eight years. The interactive graphing object (IGO) is a reusable learning object (RLO) that supports students to develop a deeper understanding of concepts that can be expressed graphically. Previous research indicated that the IGO facilitates higher levels of student engagement and deeper approaches to learning than more conventional static displays or animations of graphs. However, the student learning environment continues to evolve and diversify. There is a need for the development of RLOs that can keep pace with these changes. Some limitations with the original authoring environment which prevented more widespread use of the IGO have been addressed. Moreover, the advent of more powerful Personal Digital Assistants (PDAs) has resulted in the redesign of the student environment of the IGO, and development of a mobile form of the IGO—the mIGO. This paper discusses the design and development issues associated with improving a successful RLO, and then adapting it to facilitate learning in a mobile environment.

[Murdoch LT, Tues 2.30pm to 2.55pm]

### **Staff perceptions of online learning: Five cases from a teacher education setting in Hong Kong**

**Mike Keppell, Paulette Cote, Shihui Chen, Pamela Leung, Jennifer Jones and Cameron Richards**

This paper discusses a research project that examines academic staff perceptions of online learning in a teacher education setting in Hong Kong. Five academics from Hong Kong's leading teacher education university participated in the project over 18 months. The academics ranged in experience from first time users of online learning to experienced users. Five cases examine the use of online learning in a blended mode (all modules taught at the Institute are predominantly face to face teaching and learning). One of the aims of the project was to obtain perceptions of online learning from staff members from the Departments of Chinese, English, Information and Applied Technology and Physical Education and Sport Science (two staff). The five staff members were generally positive about their use of online learning. In particular, the online learning environment provided opportunities for student reflection, peer editing, students learning from each other and also provided another avenue for teacher student and student teacher feedback.

[Alexander LT, Mon 12 noon to 12.25pm]

### **An experience in e-learning: Using an electronic textbook**

**Margaret Kropman, Herbert P. Schoch and Hai Yap Teoh**

While students are becoming accustomed to using the Internet as an information source that supplements or replaces the normal institutional and classroom handouts, the use of the Internet or CD instead of a printed textbook is a new experience not only for students but also academics and their institutions. This article describes the experience of constructing, publishing, prescribing and using an online textbook for a postgraduate course. The experience provides valuable insights that suggest the need for changes to e-communications facilities in homes, offices and learning institutions, to students' expectations, and the need to improve purchasing interfaces and text displays before electronic textbooks can be readily accepted as an alternative learning medium.

[Fox LH, Mon 4.05pm to 4.20pm]

### **Support or spoon feeding? Research skills training for first year marketing students in a large class**

**Sarah Lambert and Venkata Yanamandram**

This paper describes the work done by the authors to develop and evaluate a new worksheet and quiz assessment developed to explicitly teach the skills required by marketing students to complete their studies and to be successful professional marketers. While concerns were raised in the teaching faculty that such interventions might amount to spoon feeding, the authors felt that there was sufficient evidence to suggest that such an activity was an effective learning support, especially in such a large first year class. Student survey results indicate that for many students the activity successfully taught a repeatable process of how to find information that would be helpful for current and future research and assignment needs. The authors conclude that the activity was a success and will deploy it again with students, although as an optional rather than mandatory activity.

[Social Sc LT, Mon 4.45pm to 5.00pm]

### **Using freely available tools to produce a partially automated plagiarism detection process**

**Thomas Lancaster and Fintan Culwin**

An increasing reliance on commercial tools for non-originality investigation of student submissions is taking academic integrity beyond its comfortable zone. There is no guarantee if such tools will continue to be available and, if they are, that they will be available at a reasonable price. Further the technical underpinning of such tools is unclear and has not been made publicly available. This may present problems if subsequently an academic misconduct investigation is started. Moreover, existing tools may not be the best suited to any given circumstance.

This paper describes a set of tools, all freely available, for finding similarity within corpora of student submissions and investigating what might, after due process, be termed plagiarism. The tools are described both technically, covering how they work, and operationally, identifying how they might be used as part of a defined plagiarism detection process. The development of the tools has taken into account the human aspects of running such a process; all employ visual techniques to aid in the investigation of non-originality. The tools are intended to help automate many of the areas that are already carried out by hand in academic institutions.

[Social Sc LT, Wed 2.00pm to 2.15pm]

### **Issues of embodiment and risk in online learning**

**Ray Land**

Counter positioning virtual learning environments with traditional face to face learning has given rise to comparisons in which cyberspace education is represented as inauthentic, as a relatively impoverished experience. Recent commentaries (for example Dreyfus, 2001) suggest that an explanatory factor in this perceived lack of intensity is the absence of risk, as experienced by both students and teachers. In this analysis, risk carries an affective intensity integral to embodiment, physical presence and the visibility

of teacher and students. This intensity is seen as crucial to learner commitment, and other social and ethical engagement. The diminished possibility of such encounters online renders what one does in cyberspace as having no 'real' consequences. This paper critically examines such claims and the extent to which online environments are seen to minimise risk through mechanisms of control. The paper problematises such notions and examines the possibility that learning in cyberspace, rather than being comparatively risk free, contains risks and disquietudes that are qualitatively different. Similarly it cautions against what is termed here the 'incorporeal fallacy' of assuming that cyberlearning is, indeed, disembodied. Rather it argues the need to reconsider how notions of risk, the subjectivity of the learner and ideas of embodiment might all be differently constituted online.

[Murdoch LT, Mon 2.30pm to 2.55pm]

### **ASCILITE community mentoring program: Empowering members through cross institutional partnering**

**Geraldine Lefoe, Helen Carter, Mike Keppell, Mike Fardon and Craig Zimitat**

The executive of ASCILITE introduced a mentoring program in 2003 to facilitate the sharing of the skills and knowledge of the ASCILITE membership, particularly in the areas that would enhance learning through technology. The program also recognised the expertise of the professional membership of ASCILITE by inviting them to act as mentors in the program. These were often long term members with some former members of the Executive. The program is unique as it recognises that mentoring is beneficial to both less experienced professionals in the field as well as experienced educational technologists who are making career changes within their institution and across institutions. The program focussed on the achievement of one identified goal within a specified period. The evaluation of the pilot program indicated that participants found the program beneficial particularly in the exchange of ideas, dialogue and communication that occurred. In addition the evaluation by the mentors-mentees and the organising committee suggested a number of recommendations to improve the program. These included: setting an achievable goal, identifying agreed outcomes and roles, developing a timeline, scheduling regular meetings, and planning to attend the annual conference. These recommendations are currently being implemented in the second year of the program.

[Social Sc LT, Tues 11.00am to 11.25am]

### **Plotting renewal: Pushing curriculum boundaries using a web based graduate attribute mapping tool**

**Kate Lowe and Lorraine Marshall**

This paper shows how technology coupled with a staff development strategy and legitimated by university strategic and quality assurance mechanisms can push boundaries and question comfort zones in a contested area. The paper explains how a web based graduate attribute mapping tool developed by Murdoch University has been harnessed with common sense and informed staff development strategies to facilitate reflection and renewal of curriculum for both individual units and courses of study.

[Social Sc LT, Tues 2.00pm to 2.25pm]

### **Animation and learning: Value for money?**

**Richard K. Lowe**

Animations are increasingly used in technology-based learning resources because of their assumed superiority over static graphics. However, empirical research has failed to provide evidence for such superiority. Recent investigations suggest that benefits from educational animations are not achieved because of the way learners process the presented information. It appears that current intuitive approaches to the design and use of animations can be ineffective because they do not take account of the information processing challenges posed for learners. New approaches using principled design guidelines based on research into perceptual and cognitive processing are required to fulfil animation's educational potential.

[Social Sc LT, Mon 4.25pm to 4.40pm]

### **Promoting metacognition through negotiated assessment**

**Joe Luca and Mark McMahon**

Metacognition is widely considered integral to effective learning. However environments that support metacognition can be difficult to develop. This paper proposes an approach to assessment through student contracts that are designed to both address issues of fairness of assessment as well as promote the planning, monitoring and evaluation integral to enhancing metacognition. By negotiating their assessment in ways that involve feedback that is internal, parallel and external to students, they have the opportunity to develop clearer understandings of themselves as learners and their own learning processes. The model is supported with online technology to help create an easy and confidential manner in which peer feedback can be collated. Initial findings suggest that students perceive themselves to be metacognitive, however, they may not be fully engaged in the processes that underpin this psychological state. It is proposed that online environments that support negotiated assessment expose these processes in ways that may enhance metacognitive outcomes, and lead to further research that identifies the nature of such processes and their value in the assessment approach.

[Alexander LT, Tues 12.00 noon to 12.25pm]

### **Pushing beyond the comfort zone: Bridging the gap between technology and pedagogy**

**Dorit Maor**

The use of online pedagogy within universities is increasing. However, this expansion is not accompanied by an associated increase in investment in lecturers' pedagogy to assist them in the transition. At present, lecturers lack the tools to describe or illustrate the meaning they try to make of this transition between online pedagogy and technology. This paper describes the changing relationship between pedagogy and technology that a group of academic staff demonstrated in a one year Action Research project. Diagrams, produced by the lecturers, demonstrated a tension between the two continua of pedagogy and technology. This way of representing their views is presented as a potential tool for assisting lecturers to construct meaning as they continue to adopt technology in their online teaching, while also providing a benchmark for their online pedagogy in order to ensure quality teaching in higher education.

[Arts LR 4, Tues 3.30pm to 3.45pm]

### **Implications for the design of online case based learning activities based on the student blended learning experience**

**Gerard Marcus, Rosanne Taylor and Robert A. Ellis**

An evidence based approach was adopted in the redesign of online learning resources for undergraduates in a professional Veterinary Science degree program. Students used online case based resources in blended learning activities to extend and enhance their understanding of the theories underpinning Veterinary Science and to develop their skills in clinical problem solving. This study investigates what the students thought they were learning through the case studies and how the students engaged with the activities. It then discusses the implications of the students' experience of the materials for improving the design of the activities.

[Murdoch LT, Tues 11.30am to 11.55am]

### **You, by proxy: Advances in virtual teachers**

**Andrew Marriott**

This paper examines your future as a teacher and the many faces that you may wear. The paper first briefly outlines the relevant background areas of educational technology, embodied conversational agents and dialogue management. It then discusses some of the researcher's recent projects in software based mentoring and in embodied conversational agents, and uses these to propose various realistic future teaching and learning scenarios. It is hoped that this will foster discussion and/or persuade other teachers to move beyond the comfort zone of existing IT usage in their teaching.

[Social Sc LT, Wed 11.00am to 11.25am]

### **E-learning standards: Open enablers of learning or compliance strait jackets?**

**Stephen Marshall**

E-learning standards have attracted a substantial and growing amount of attention from practitioners, institutions and governments over the past decade. Millions of dollars are being invested in a process of standardisation that, while aimed at supporting e-learning, seems to have neglected important aspects of learning that consequently appear to be at risk of being devalued. The current standards agendas of interoperability and discovery seem more closely aligned with the desire to commoditise learning and create new economic opportunities than with the needs of learners. This paper casts a critical eye over current developments and suggests closer attention to the role of standards in improving quality and supporting teachers and learners rather than constraining them. While standardisation implies a comforting sense of security, reliability and consistency, we may have to remain at least partially outside of the standards "comfort zone" if we wish to obtain real benefits from technology integration into education.

[Fox LH, Mon 2.30pm to 2.55pm]

### **Education without frontiers? International participation in an online astronomy program**

**Margaret Mazzolini and Sarah Maddison**

Online programs that include international students among their cohort are becoming commonplace. As the leading international online astronomy program, Swinburne Astronomy Online (SAO) is distinctive in that students from the program's country of origin are in the minority among a cohort located in over 30 countries, taught by instructors who are also located around the world. We discuss factors that have helped make SAO successful internationally, plus issues that arise when teaching astronomy in an international context.

This international approach is not as general as it might seem: English is the SAO language of instruction and many of its far flung international students are expatriate English speakers, so non-native English speakers (NNES) are actually in a very small minority. SAO features primarily student lead discussion in asynchronous discussion forums with emphasis on assessment tasks that reward communication skills - design features that may not always be appropriate outside native English speaking cultures. We present results of a survey of NNES participants, plus analysis of their forum contribution rates and performance in assessment tasks. We conclude by briefly raising issues likely to be faced when offering online programs like SAO to international cohorts that include more linguistically and culturally diverse populations of participants.

[Social Sc LT, Wed 2.40pm to 2.55pm]

### **An online diary as a research and evaluation tool for first year physics**

**Iain McAlpine, Kate Wilson, Carol Russell and Maria Cunningham**

Concerns about the quality of student learning in first year Physics courses at UNSW, particularly laboratory activities, led to a decision to introduce some new ideas about learning activities. A comprehensive evaluation of student learning in these courses was initiated to clarify the student perceptions of first year courses. An online diary, using surveys and a discussion in WebCT, was used to gather regular feedback from students. A number of student volunteers responded to the surveys and answered a range of open ended questions at regular intervals over three semesters. Open ended text responses were analysed using NVIVO software to identify themes and quantify the responses to each theme. This led to the introduction of open ended group learning tasks. The paper details the process and outlines enhancements to the courses and their effectiveness.

[Alexander LT, Wed 11.00am to 11.25am]

### **Assessing quality of feedback in online marking databases: An opportunity for academic professional development or just Big Brother?**

**Shane McKenzie**

This paper explores possibilities for utilising student assignment feedback, written by academics and stored in an online marking and results system called OMAR at the University of Melbourne, for quality assurance of feedback and to provide professional development for academics. The paper draws upon the results of a survey of staff and students using OMAR in 2003, which suggested that the quality of feedback is related to the individual academic's commitment to the task more so than any assistive technology (McKenzie, 2003b), and while this is intuitive it is yet to be tested. The mere thought of assessing the quality of feedback given to students via data and text mining of online marking databases has already taken some academics beyond their traditional comfort zones for performance appraisal. The possibilities raise legal and ethical issues in relation to privacy, consent, accountability and appropriate uses of the data that might be generated. On the other hand, taking advantage of analysing such databases could present a better means of providing feedback to academics on one of their most common tasks, which would benefit both academics and students.

[Social Sc LT, Tues 4.10pm to 4.25pm]

### **An investigation of the motivational aspects of peer and self assessment tasks to enhance teamwork outcomes**

**Catherine McLoughlin and Joe Luca**

Teamwork and cooperative learning models are based on the premise that learning is best achieved interactively rather than through a one-way transmission process. In this study, the relationship between students' motivational orientation and the quality of learning in collaborative teams is investigated. A self-report measure of student self-efficacy and self-regulation was administered to students working on team-based assessment tasks, and correlated with performance data obtained from classroom assignments. The results showed that motivational beliefs were the best predictor of academic performance.

[Alexander LT, Wed 11.30am to 11.55am]

### **The converging streams of globalisation and eLearning: Stretching the comfort zone**

**Carmel McNaught and Douglas R. Vogel**

In this paper we examine the complex web of relationships which exists within trans-national educational programs. In particular, we focus on the role technology can play in supporting interactions between learners when there is significant language and cultural variation. We progressively build up a model of key factors that need to be accommodated if successful trans-national education is to occur. The factors include establishing a common frame of reference, attention to process, minimal critical structure, the need to capture context, and time for adjustment. Multiple technologies are preferable to a single channel with audio, video and data each providing elements of support such that the technology forms no barriers to emerging team processes. Both technical and personal support, and frequent monitoring of team progress are important to stimulate interaction. A supportive rather than directive management style with a balance between proactive and reactive support is needed. We conclude that collective knowledge and ability exists at present to form and manage dynamic virtual teams, working in interactive environments supported by cost-effective technologies that can enhance the probability of virtual team collaboration success.

[Social Sc LT, Mon 10.05am to 10.30am]

### **Online learning: Which strategies do New Zealand students perceive as most valuable?**

**Mae McSparran**

More and more tertiary education delivery includes the use of a Managed Learning Environment (MLE). Within this environment academic lecturers are known as 'Instructors'. The purpose of a MLE is to facilitate and enhance flexible online learning in a period of extraordinary growth of technology

mediated or technology assisted learning. Instructors have been encouraged to respond positively by applying the various strategies the tools within the MLE software provides. Many instructors have published papers on the results of their efforts. However, the majority of the research to date has been focussed on case studies or, what instructors feel is valuable about flexible learning versus traditional teaching and learning. There is a gap regarding what strategies the students perceive as most valuable and useful to them. This paper describes the results of a pilot study conducted with Masters computing students (MComp) in New Zealand. The writer asked and documented what teaching and learning strategies the students considered as most valuable and, consequently more motivated to use.

[Alexander LT, Mon 4.05pm to 4.20pm]

### **Asynchronous communication: Strategies for equitable e-learning**

**Wendy Meyers, Sue Bennett and Pauline Lysaght**

This paper reflects on research carried out at the University of Wollongong to examine equity issues in asynchronous communication. The focus was on mature-aged rural women and their experiences in online learning using ICTs. Results of the literature review and research analysis point to a number of practical strategies for developing more equitable asynchronous communication in higher education.

[Fox LH, Tues 11.00am to 11.25am]

### **Online conference case study: Creating a comfort zone within an emerging community of practice**

**Anne Miller, Mia O'Brien, Greta Kelly and Alethea Blackler**

This paper outlines the context and theoretical basis for the design, implementation and evaluation of an online conference conducted in 2003. The purpose of the conference was to provide postgraduate distance learners with an opportunity to interact with human factors and healthcare professionals, thereby providing them with exposure to this emerging community of practice. The conference was delivered through a WebCT site and stimulated various modes of interaction. The paper discusses the design and format of the conference and details an analysis of the online transcript that shows development of learning communities as "comfort zones" within which the participants could communicate in a common language and atmosphere of understanding over the 2 days that the conference ran.

[Fox LH, Tues 11.30am to 11.55am]

### **Educational technology: A tonic for the unwell**

**Christopher K Morgan**

Students having to deal with chronic illness carry a burden and disadvantage unfamiliar to most staff and other students. The disability they bear may be invisible to others yet debilitating for them. A consequence for them may be additional difficulties in achieving their learning goals and an academic performance that does not reflect their potential. A fortunate by-product of advancements made with educational technology is that these students now often have the tools at their disposal to help them overcome some aspects of their disadvantage.

This paper explores this largely neglected dimension of higher education and in so doing tells the story of one student with a chronic illness. Her story serves to illustrate how staff may not realise the occurrence and extent of the disadvantage accruing to some of their students. It explains the role that educational technology can play in assisting such students manage the demands associated with their university studies and to achieve their academic endeavours.

[Social Sc LT, Wed 2.20pm to 2.35pm]

### **An evaluation of it courses delivered via a range of mixed modes**

**Ed Morris, Catherine Zuluaga and Liz Atkinson**

We report an evaluation study of staff and students in tertiary IT courses delivered via a range of mixed modes. The range covers 100% online, 100% face to face (F2F) onshore and offshore, and both 50%

and 75% online offshore. We address service expectations, learning approaches, and satisfaction levels by surveying student and staff priorities (eg. quality academic material, email and assessment turnaround, F2F access to staff).

Our evaluation study precedes a marketing initiative targeting education providers onshore and offshore. We aim to inform their choices across the online/F2F delivery spectrum by explaining trade offs (pedagogy, costing, resourcing, etc) from staff/student perspectives.

Based on survey responses, follow-up interviews, and student cohort characteristics, our main findings support: an inverse relationship between availability of a particular service in a mixed mode course and its priority to students; 100% online courses for mature age, working, independent learners, and 50% online (or less) courses for less mature, less independent learners instead of more expensive 100% F2F versions, and a difference in learning styles preferred by 'Asian' and 'African' students, which requires further research if cultural factors are to be included in marketing the most appropriate online/F2F mix.

[Alexander LT, Wed 12 noon to 12.25pm]

### **Opening Pandora's box of academic integrity: Using plagiarism detection software** **Sue Mulcahy and Christine Goodacre**

Academic integrity issues are currently a major focus of concern at most tertiary institutions. This paper details the strategic framework for work at the University of Tasmania (UTAS) for management of these issues. It focuses on the introduction of plagiarism detection software which has served to highlight the wide variety of issues associated with academic integrity and the importance of embedding good practice on the part of both staff and students. The paper reports on the Pandora's box of implementation issues – legal, workload, training and support – that have emerged and the strategies being used to manage these, as part of the project. It recommends the use of a model which focuses on an educative approach to the management of academic integrity, as well as including mechanisms for identifying and discouraging plagiarism, and where it occurs, proceeding against it as academic misconduct. Many of the issues raised by the project have challenged the 'comfort zones' of students, staff and university academic administration. These are being managed both through the approaches being used in the pilot and the project governance adopted.

[Social Sc LT, Tues 12.00 noon to 12.25pm]

### **Using self regulated learning to manage the discomfort of becoming fluent with information technology**

**Victoria Neville and Sue Bennett**

The technologically complex and changing world of the twenty first century requires teachers who are both knowledgeable and skilled in using information technology in their pedagogical practices. The changing nature of information technology means that teachers need to be flexible in how they use information technology in their teaching, adaptable to the changes in technological developments, problem solvers in unfamiliar circumstances, and continuing learners throughout their professional life. These ideas are encapsulated in the concept of fluency with information technology, or FITness (Committee on Information Technology Literacy, 1999).

This research study, in progress, uses an interpretive, qualitative methodological approach to investigate the influence of self regulated learning on the development of fluency with information technology in pre-service teacher education students. This will provide opportunities for a better understanding of the phenomenon of self regulated learning as an influence within the context of learning FITness, and will assist our understanding of the connections between instruction (using self regulated learning) and outcomes (FITness).

[Murdoch LT, Mon 4.45pm to 5.00pm]

## **International communication: Putting your money where your mouth is**

**Mark Northover**

An experimental approach to an undergraduate International Communication assignment involved the online collaboration of tertiary students from a New Zealand Institute of Technology and a New York College. Students were assigned working groups with four NZ and four US students each, and required to complete and submit a case study project. At the end of the course, students at both colleges were surveyed about their attitudes and experiences of the online collaboration, and what they had learned as a consequence. While attitudes ranged from the extremes of 'fantastic' to 'waste of time', there was a general consensus that the experience had been worthwhile in exposing them to a real world example of working in a cross cultural environment. While the challenges of new technology and time zones had a significant effect on communication and time management for many, learning to work with a different cultural paradigm and to live and work with compromises for the completion of the project was an important lesson for many.

[Alexander LT, Wed 2.40pm to 2.55pm]

## **Comfort + ubiquity = adoption: Enhancing first year students' communication skills with handheld computers**

**Beverley Oliver and Corri Barrett**

Researchers at Curtin University of Technology have received corporate sponsorship for an ambitious international project examining the learning benefits of integrating the use of handheld computing devices into undergraduate communications skills units. The project aims to determine whether common conceptions of young students' comfort with portable communications technologies translates into increased engagement with learning resources and activities when channelled via wireless networks to readily available computing devices.

[Fox LH, Tues 4.10pm to 4.25pm]

## **Moving beyond instructional comfort zones with online courses**

**Ron Oliver**

Conventional teaching and learning in higher education, that within our current comfort zone, has for many years been based around the design and development of courses and curricula which have been based on the presentation of knowledge and course content. The instructional models within most institutions have been based around lectures and content presentations. With moves to online learning, there has been considerable translation of existing materials and instructional strategies into electronic versions and forms. Such activities often fail to make use of the advantages and opportunities of the new technologies. They rarely take us beyond our current instructional comfort zone despite their capability to do so. This paper describes aspects of conventional courses and delivery strategies which often limit instructional effectiveness and suggests three main elements, inappropriate description of course objectives; the planning of courses around content; and the choice of inappropriate assessment strategies, as the principal factors impeding the development of quality online learning materials. The paper provides strategies by which these limitations in existing courses can be overcome in a process of re-engineering into outcomes based approaches and forms more suitable for online delivery which provide enhanced opportunities for teaching and learning. The paper argues the need for designers to move beyond their comfort zones in such ways as the development of learning objectives which focus on performance and capabilities as intended learning outcomes and which make the course content and curricula a means to an end rather than as an end in themselves. The paper describes how the development of such objectives can provide opportunities for problem and task based learning designs, learning designs that support higher order learning outcomes.

[Murdoch LT, Tues 10.05am to 10.30am]

## **Educational design as transdisciplinary partnership: Supporting assessment design for online**

**Meg O'Reilly**

The design of student assessment for the online context can be a disquieting experience without the support of colleagues and a group of peers from across a range of disciplines with whom to share ideas. This paper reports on interviews conducted with academic "peak performers" as well as some educational design practitioners about the current practices of designing for online assessment. A transdisciplinary approach to educational design is proposed for further exploration.

[Murdoch LT, Mon 11.30am to 11.55am]

## **A method of defining learning processes**

**Weidong Pan and Igor Hawryszkiewicz**

Currently many instructional Web sites just simply deliver course materials without integrating the role of teacher in guiding learners to use these materials to construct knowledge. Learners only passively receive the presented materials. Our research is to provide support services to actively assist learners to construct knowledge using the constructivist approach to learning. This paper focuses on providing services to assist learners to choose appropriate resources and methods, and guide them to align learning towards their study objectives. These services are implemented through electronic workspaces that manage the learning processes. A specification language will be presented to specify the learning processes in a way that constructivist learning can be supported and facilitated. The approach to managing the learning processes will be investigated. A learning environment that assists learners to use constructivist methods of learning to build new competences will be presented.

[Arts LR 4, Tues 3.50pm to 4.05pm]

## **Extending the academic comfort zone: Smooth transition from content rich linear courseware to problem based learning online**

**Linda Pannan, Chris van der Craats, Catherine Zuluaga, and Daniel Barnes**

This paper deals with the problem of what to do with legacy online courseware. The study reported demonstrates how old, content rich, linear online courseware may be restructured into a topic based learning resource suitable for supporting problem based learning. A process model is presented demonstrating how the conversion disaggregates the old course content from course management, facilitating reuse of the content in other learning contexts as required. Hence, the resultant online learning resource may be used to support a variety of pedagogic approaches. An added benefit is that the process requires minimal time commitment from the academic content specialist and the delivering academic.

[Fox LH, Wed 1.30pm to 1.55pm]

## **Streaming media for higher education: Signs of settling**

**Roly Parfenovics and Marty Fletcher**

This paper updates an ongoing watching brief (Parfenovics & Fletcher, 2003) concerning evaluation of streaming media applications and their potential to be integrated into higher education program delivery. The evaluation criteria for the brief are reviewed and updated. Other considerations meriting report include industry standards progress and industry consolidation, including the packaging of applications to provide broader production and delivery functionality. The brief at this stage finds some rationalisation of the market, with dominant vendors emerging, leaving a clearer picture of risks and costs for higher education institutions who may seek to leverage the technologies for teaching and learning benefits. A classifying continuum for streaming application products, according to functionality, is proposed. Such a tool will assist institutions to determine if an application meets their current needs. Awareness of these factors informs a strategic approach to technology planning and integration in an environment that is still largely hype driven.

[Fox LH, Tues 4.30pm to 4.45pm]

### **Revisiting associations between student performance outcomes and formative assessment opportunities: Is there any impact on student learning?**

**Mary Peat, Sue Franklin, Marcia Devlin and Margaret Charles**

This project developed as a result of some inconclusive data from an investigation of whether a relationship existed between the use of formative assessment opportunities and performance, as measured by final grade. We were expecting to show our colleagues and students that use of formative assessment resources had the potential to improve performance. This first study, done in semester 1 2002, indicated that there was no apparent relationship even though the students reported how useful they found the resources. This led us to ask if there was a transition effect such that students were not yet working in an independent way and making full use of the resources, and/or whether in order to see an effect we needed to persuade non-users of the resources to become users before investigating if use can be correlated with improvement in performance. With the 2002-3 NextEd ASCILITE Research Grant we set out to repeat our project and to look at use and usefulness of resources in both first and second semester, to encourage non-users to become users and to investigate use with performance. Now our story has a different ending.

[Alexander LT, Tues 10.05am to 10.30am]

### **Beyond the comfort zone: Using informal mentoring to create lifelines for students in disequilibrium**

**Lina Pelliccione and Rozz Albon**

When university students are exposed to new learning environments and complex challenging concepts they find themselves in a state of disequilibrium, part of a process that generates new knowledge. Encouraging students to go beyond their comfort zone is also a challenge for educators: at what stage does the task become too difficult and totally overwhelming for the student. Establishing effective support structures through informal mentoring is one such vehicle to achieve both the challenge and the support required by university students when learning is demanding. Informal mentoring is a lifeline to enable students to move from a state of disequilibrium to a more comfortable state. This paper reports on the preliminary findings of a study which investigates the enabling informal mentor environment which supported students when they were out of their comfort zone. This study involved a cohort of first year pre-service Bachelor of Education students enrolled in a core Educational Psychology unit and an Information and Communication Technology unit. A naturalistic approach was adopted with the use of various data generation tools such as diaries, observations, a questionnaire and a sociogram. Informal mentoring was a powerful medium to accelerate in depth learning.

[Fox LH, Wed 12 noon to 12.25pm]

### **Closing the loop: Quality in process**

**Russ Pennell**

In our context of producing educational multimedia resources as well as developing the skills of staff, we use end of project surveys to gain information about our performance. This has resulted in limited returns, usually positive but lacking in detail. This paper describes an additional step we have taken to improve our products and processes by closing the loop on our procedure, using client experiences to inform and modify our structure and approach. After our clients have used their creations with students, we mine their experience through targeted questions that provide prescriptions for action. The information is used internally by our management group to judge and to redesign our production processes and procedures. Issues identified include: language problems between academics and creative staff: need for greater acknowledgment for academic staff within their peer group.

[Arts LR 4, Mon 4.25pm to 4.40pm]

### **The design dimensions of e-learning**

**Rob Phillips**

The currently popular term e-learning is shown to have several meanings which confuse discussion about a new technology which is finding widespread international use in a range of educational sectors. This paper analyses the characteristics of e-learning applications, and proposes a set of four design dimensions which could be considered when designing and assessing the suitability of e-learning applications. The applicability of the four proposed dimensions, and their shortcomings, are discussed in detail, and found to be justifiable.

[Murdoch LT, Tues 11.00am to 11.25am]

### **But that didn't happen last semester: Explanations of the mediated environmental factors that affect online tutor capabilities**

**Doug Reid and C. Paul Newhouse**

The purpose of this study was to examine the online learning milieu to identify what capabilities are required of online tutors. To do this, it was necessary to determine what environmental factors affect online tutor capabilities and what the relationship was between the capabilities and the factors. This was accomplished by using an ethnographic approach of data collection to explore the perceptions of online tutors, students and unit coordinators in tertiary online learning environments. This study identified critical online tutors sub-capabilities as well as thirteen environmental factors which have a mediated affected upon these sub-capabilities. The unearthed environmental factors emerged from the analysis of the collected data which allowed the relationship between the capabilities and factors to be investigated.

One of the major implications stemming from this research was the formation of a model of the mediated relationships between online tutor capabilities and environmental factors which affect them. This included the creation of a framework of capabilities and sub-capabilities specifically for online tutors and the identification and organisation of environmental factors which affect online tutor capabilities, which this paper will focus upon.

[Social Sc LT, Mon 12 noon to 12.25pm]

### **Discomfort at the coalface: Issues for sessional tutors teaching in online enhanced learning environments**

**Mary Rice**

Higher education institutions are undergoing a period of rapid change during which time a number of strategic professional development efforts have been made to improve teaching in order to improve students' learning outcomes. Sessional tutors, who are consistently at the coalface and have close contact with students, have often been excluded from formal opportunities for professional development offered to more permanent staff. This anomaly is now being recognised and more efforts are being made across the sector to ensure that tutors are better equipped to teach in contemporary learning environments. This paper discusses issues of concern to tutors that arose from recent professional development workshops and suggests that some of the major issues currently confronting sessional staff relate to the need to be able to teach effectively in online enhanced learning environments.

[Social Sc LT, Tues 4.30pm to 4.45pm]

### **Sharing pedagogical practice on the teaching of generic skills**

**Will Rifkin and Catherine McLoughlin**

The Commonwealth supported *SkillCity* Project focussed on potentially cost effective and efficient ways to support staff to share teaching materials and insights online. This paper discusses what has been achieved in the Project and the hurdles that remain in creating an online resource to enable academics to teach 'generic skills.' Outcomes are discussed in view of the Australian academic context, where resources are stretched and heavy teaching and administrative loads are carried by staff. The



paper addresses the initial conceptualisation for online delivery of teaching materials for generic communication skills for group work and teamwork, the expected challenges in getting lecturers to adopt these materials, and the equivocal impact to date of this attempt to move university lecturers into innovative practices 'beyond the comfort zone' for their own learning.  
[Social Sc LT, Tues 2.30pm to 2.55pm]

### **Teaching programming with objects**

**Geoffrey G. Roy and Jocelyn Armarego**

This paper describes a new tool (*P-Coder*) that can assist in the teaching of Object-Oriented (O-O) programming concepts to novices. It builds on a pseudocode model that focuses on the most basic computational principles of sequence, iteration, selection and recursion. These are developed within an O-O framework that provides several views of the model: a Design View where the user interacts with the model to design the program (algorithms and structure); a Class View where the class structure can be visualised; a Code View where the generated code can be inspected, compiled and executed; and an Object View where objects can be instantiated from the defined classes.

*P-Coder* provides a complete environment to demonstrate and implement many O-O concepts for novice users. There is a focus on developing an understanding of basic principles through a graphic/text based pseudocode notation representing the key program elements in a tree structured diagram.

Users are able to design and build complete programs, compile and execute them in the normal way.

Interactive object instantiation is also supported, allowing users to create, inspect and manipulate objects in their runtime state. This provides a useful perspective in teaching where the distinctions between Classes and Objects are often left confused.

[Arts LR 4, Tues 2.30pm to 2.55pm]

### **The 6 by the power of 3 model for enhancing academic teachers' capacities for effective online teaching and learning: Benefits, initiatives and future directions**

**Stephen Segrave, Dale Holt and James Farmer**

To gain the full educational benefits of the major new investments in corporate technologies supporting online teaching and learning it is argued that a strategic, systems based approach of academic professional development (APD) is required. Such an approach requires a clear view of the key areas of potential and enduring teaching and learning benefit which can be realised from online developments, including an understanding of the changing role of the academic teacher in higher education, the identification of the desired professional capacities to educate online and the implementation of a number of coordinated initiatives to develop these professional capacities in order to engage constructively with the learning and technology opportunities. Based on previous work, we propose a '6' by the power of '3' model of Academic Professional Capacities Development for effective APD of online teaching and learning. The model can help inform the actions of policy makers, executives and practitioners in ways that promote an authentic learning organisation.

[Social Sc LT, Mon 1.30pm to 1.55pm]

### **Questioning the teacher's comfort zone with online learning: A 4 year case study of students' perceptions of online learning**

**Susan J Shannon**

Students in a first year course evaluated the contribution to their learning of online technologies over the period 2001-2004 through their Student Evaluation of Learning and Teaching responses. A minimum eighty percent believe that (1) online learning has enhanced their ability to complete tasks, at least 60% believe that (2) online learning has helped their ability to learn independently, and 67% believe that (3) their knowledge of the course was enhanced through the online course experiences. But there has been a very significant decline from 2002 to 2004 in the numbers who believe (1) and (2). There has also been a 20% decrease from 2001 to 2004 in the number who believe that (4) the use of Discussion Boards (assessable and non-assessable) was useful to their learning, and this decline is very

significant ( $p=0.0001$ ). Students' reasons are explored through qualitative research methods to reveal that students commencing University are seeking social learning experiences which connect them with their fellow learners. An uncomfortable gap between teacher's valuing and student's valuing of online learning is exposed – whilst 80% of students perceive that completing tasks was aided by online learning only 66% of teachers at their University believe that overall online learning benefits their students.

[Fox LH, Tues 2.30pm to 2.55pm]

### **Interacting with online learners: How new elaborations of online presence can foster critical thinking and reflection**

**Rod Sims and Bethany Bovard**

The growth of online teaching and learning environments within higher education has effectively established this delivery model as integral to face to face, flexible or distance delivery across the majority of disciplines. A common component of these environments is the discussion forum, typically operating asynchronously and designed to establish a collaborative networked learning environment to foster communities of practice and inquiry. However, based on our online experiences, the best practice frameworks aligned to these environments do not always address the complexity of interactions within the online dynamic. To examine the reason for this discrepancy, we are examining one of the key factors relevant to the creation and maintenance of online communities and networks, which is the presence exhibited by both teachers and learners. Using a combination of existing theoretical frameworks, asynchronous discussion data and personal experiences as teachers, learners and professional developers, we present a classification framework based on multiple student perspectives for different learner roles by which teachers and learners can maximise the effectiveness of interactions within online teaching and learning environments.

[Alexander LT, Mon 11.30am to 11.55am]

### **Patterns in education systems: Are there lessons from the enterprise domain?**

**Douglas Siviter and Andrew Wheeler**

This paper describes an effort to explore ways in which educational scenarios can benefit from lessons learned in enterprise scenarios. The exploration is well suited to the conference theme of 'beyond the comfort zone' because from an enterprise perspective organisations already have a history of being rapidly dragged out of their comfort zones and can hence provide insights at many levels including opportunities, challenges, and strategies and techniques for coping, etc. For many organisations the challenge is stark, i.e., evolve rapidly from a business to an 'on demand eBusiness' or cease to be viable. That challenge requires organisations to understand and embrace evolving operational practices and the rapidly evolving technologies required to support those practices. We notice that trends and advances in enterprise practices and enterprise technologies emerge at a significantly faster rate than their equivalents in the domain of education and hence we assert that the opportunities for the domain of education to learn from this are significant. In particular we note the growing trend of adopting pattern oriented approaches for clarifying, analysing and designing technology oriented scenarios and we are exploring ways in which pattern oriented approaches can assist in helping educational scenarios to migrate beyond their current comfort zones.

[Alexander LT, Tues 2.00pm to 2.25pm]

### **The virtual university and the quality assurance process: Recruiting and retaining the right faculty**

**Karin Sixl-Daniell, Amy Wong, and Jeremy B. Williams**

The paper commences with a brief summary of the literature on e-learning in higher education and the quality assurance process. This is followed by an overview of the Universitas 21 Global quality assurance framework. Within this framework there is particular emphasis on the process governing the appointment (and re-appointment) of adjunct faculty; a process that incorporates four discrete steps: (i)

recruitment; (ii) training and accreditation; (iii) supervision and mentoring; and (iv) reflection and teaching performance evaluation. Importantly, the design of the framework ensures that this element of the internal quality assurance process provides, not only an enhanced learning experience for students, but also rich longitudinal data for the purposes of external verification of quality and standards. The paper concludes that while the online environment certainly presents new challenges for tried and tested quality assurance processes, it also provides opportunities to usher in new guidelines capable of bringing about a significant improvement in standards.

[Arts LR 4, Mon 4.45pm to 5.00pm]

## Establishing a zone where technology innovation is supported

**Caroline Steel**

Learning technologies are now a ubiquitous force in the higher education sector however we continue to pursue more inventive ways to use them for teaching and learning. Many teaching academics that seek to be innovative do not have access to a supportive technology innovation zone. The aim of this study was to investigate the articulated staff development needs of academics involved in a faculty based technology innovation project and create the conditions that would cultivate innovation. The study sought to find out how academics perceived they might best be assisted through their technology innovation process so that participants' needs were incorporated into planning. A questionnaire was used to elicit background information about the academics' experience, skills and self diagnosed skill deficits in this context. Participants were also requested to provide information about how they thought they would best acquire the skills given their time and other resource constraints. A modified Delphi Technique was utilised to achieve some consensus on what academics required to support technology innovation. Complemented by an enabling and empowering team based approach, the academics were provided with an innovation zone to achieve significant goals for the project.

[Social Sc LT, Mon 2.00pm to 2.25pm]

## Action research as an investigative approach within a computer based community of learners

**Carole Steketee**

The purpose of this paper is to outline the method of research used in a PhD project where the aim was to determine the extent to which computers enhanced learning when implemented within a distributed learning environment (DLE). When learning is distributed, cognition is not solely an individual pursuit but is shared with mediating resources found within the learning environment. A type of communal environment is developed within which students, together with other students and resources, construct new knowledge and understandings. In this instance, analysis was based on the nature of discourse to emerge from student interactions around the computer. It was essential, therefore, to adopt a research methodology that would carefully detect the discrete levels of understandings evident within these collaborations. Given the capricious nature of social interactions however, the methodology also needed to be flexible and accommodating. As such, a *tentative action research plan* was devised to manage these issues.

[Murdoch LT, Wed 2.00pm to 2.15pm]

## Bulletproof assessment, war stories, and tactics: Avoiding cybercheating

**Susan Stoney and Mark McMahon**

Universities have always had policies regarding plagiarism, and have encouraged their staff to enforce high academic standards with regards to the use of other people's work, but the advent of the Internet has made the whole issue of academic misconduct a topic of much discussion within most academic environments. This paper views the fight against cheating as a war against which there are three tactics – fighting with intelligence, fighting with propaganda, and fighting with armour. The paper outlines some of the critical facts of cybercheating, including the ways in which Universities are attempting to combat students copying other's works using technological solutions. It also uses two case studies to

highlight some of the ways in which students use technology to cheat, how they were caught, and how some of the cheating can be avoided.

[Alexander LT, Tues 3.30pm to 3.45pm]

## Design for communities of practice: Eduforge

**Michelle Strand, Ken Udas and Yasmin Lee**

Eduforge is a virtual collaborative learning and exploratory environment designed for the sharing of ideas, research outcomes, open source educational software, and tools within a community of learners and researchers. Eduforge encourages cross institutional collaboration among individuals within an independent environment outside the normal boundaries of organisational infrastructure and resources, and, therefore encourages Communities of Practice (CoPs) to develop. It is an open access resource allowing anyone with an interest in the exploration of teaching and learning to join the community.

[Alexander LT, Wed 2.00pm to 2.15pm]

## Online assessment and study

**Geoff I. Swan**

An online quizzing environment created for a first year physics unit has resulted in high student satisfaction and participation rates. Compulsory and formative assessment has been a key ingredient in this success with students allowed to use detailed feedback to improve their quiz scores. Students believed that the quizzes helped them study more consistently over the semester and learn physics. The quizzes have also affected study habits through preparation, use of detailed feedback and collaboration.

[Alexander LT, Tues 4.10pm to 4.25pm]

## Implementing and evaluating e-learning environments

**Sue Trinidad and John Pearson**

The research reported in this paper used the Online Learning Environment Survey (OLES) as a tool to evaluate e-learning environments. Data gathered from university classes in Hong Kong using blended e-learning were used to illustrate the value of OLES in helping educators reflect on the online learning environment provided for students. Comments from interviews were used to verify the data gathered online. OLES was found to be a valuable instrument for gathering data to help educators reflect on what had worked or what might be improved in their classes. These educators were also able to see the extent to which the actual experiences of students in the module matched their preferred online learning environment.

[Alexander LT, Wed 1.30pm to 1.55pm]

## Virtual focus groups: New technologies, new opportunities, new learning environments

**Lyn Turney and Catherine Pocknee**

New technologies and ICT provide unique and inventive opportunities for qualitative researchers. Their innate ability to accurately record discursive data in text format, as well as provide safe, secure and anonymous environments for participants, makes them amenable to trialling a variety of qualitative research methodologies. This paper reports a collaborative project involving two academics and two research students as they examine and trial the potential of online discussion boards in Blackboard®, to conduct virtual focus groups as part of an existing research project. What the researchers found was that not only was the method theoretically sound, but it was also extremely effective in creating 'authentic learning' environments for research students as they acquire research skills. The collaborative approach they established within the project team created an egalitarian, self directed learning environment for the students that facilitated acquisition of advanced research skills.

[Social Sc LT, Wed 11.30am to 11.55am]

### **Using extensible mark up language for the single source delivery of teaching resources via print and the Web: A practical example**

**Lucas Walsh**

This paper seeks to provide an introduction to Extensible Mark up Language (XML) by looking at its use in a single source publishing approach to the provision of teaching resources in both hardcopy and online. Using the development of the International Baccalaureate's online Economics Subject Guide as a practical example, this discussion reflects on some of the key technological and educational limitations and strengths of using XML.

[Social Sc LT, Wed 12 noon to 12.25pm]

### **Exploration of a first year university multimedia module on field geology**

**Mark Warne, David Owies and Glenn McNolty**

As part of the teaching programme within a first year university unit on the earth's physical systems, a 'virtual reality' field trip has been developed to support field studies relating to geological materials and landscape history. This module aims to increase student understanding of the use of geological features in the evaluation of geological / landscape history. The module has various applications in the curriculum. For students attending a weekend excursion, the module is available as an adjunct to actual field studies and can be used by students as either a digital pre-lab or as an excursion review tutorial. For students not attending a weekend excursion (i.e. off campus students), it is used as a digital 'virtual reality' substitute for field site inspection. The module has simple linked interactive and dynamic image base digital media that provide a framework in which the geology and landscape history of excursion sites can be explored. This module is delivered as a website via CD, but can also be integrated with the 'online interface' for this unit via a QuickTime reference movie loaded inside a relevant 'Deakin (University) Studies Online' web page. The latter strategy enables assimilation of large multimedia files into online teaching formats.

[Murdoch LT, Wed 11.30am to 11.55am]

### **Creating authentic assessments: A method for the authoring of open book open web examinations**

**Jeremy B. Williams**

The central premise of this paper is that, as an assessment instrument, the final examination has become something of an anachronism. Little has changed in the centuries that universities have been in existence and, even with the advent of sophisticated information and communication technologies, come the end of semester, the vast majority of students still find themselves sitting in rows in invigilated examination halls, answering questions with paper and a ball-point pen. Quite aside from the fact these are tools that are rarely used these days, the assessment tasks that students are presented with are seldom representative of any authentic, 'real world' setting. This paper outlines a process for the construction of open book open web type examinations, and argues that this is a format more in keeping with modern learning theory.

[Alexander LT, Wed 2.20pm to 2.35pm]

### **Exploring SCORM and the national flexible learning toolboxes**

**Ralph Wirski, Grame Brownfield and Ron Oliver**

This paper discusses a project which investigated use of the SCORM model within the design and development process of high quality learning materials to explore its capability for supporting the reusability and interoperability of digital resources within the Australian VET sector. The paper describes SCORM and its potential advantages and discusses its retrospective implementation to the redevelopment of learning materials in the National Flexible Toolbox Project. The paper describes the process of applying SCORM to the development of an inquiry based set of learning resources and discusses implications for the design of reusable quality e-learning resources and learning objects using the SCORM model.

[Murdoch LT, Mon 12 noon to 12.25pm]

### **Using multiple choice questions effectively in Information Technology education**

**Karyn Woodford and Peter Bancroft**

As academics are confronted with problems such as larger classes and the introduction of a trimester year of study, it has become increasingly necessary to search for alternative forms of assessment. This is certainly the case in Information Technology (IT), where more lecturers are using multiple choice questions as a matter of expediency and in some instances, the quality of the assessment is being neglected. This paper provides guidance for IT lecturers who wish to write effective tests containing good multiple choice questions. Some of the points raised are founded in the long history of research into this form of assessment but IT lecturers are, in general, unlikely to be familiar with many of the matters discussed. The paper also considers the major criticism of multiple choice questions (that they do not test anything more than just straight recall of facts) and examines ways of overcoming this misconception. It is our aim to raise awareness of these issues in IT education, but teachers in other disciplines may also find the material useful.

[Alexander LT, Tues 4.30pm to 4.45pm]

### **Online discussions: Promoting effective student to student interaction**

**Helen Wozniak and Sue Silveira**

Teachers and students are increasingly comfortable with the use of technology for communication, but are still grappling with strategies to ensure their effective use and achievement of quality outcomes. Research on computer mediated communication (CMC) has focused on the teacher's or e-moderator's role in facilitating the use of CMC and not how the student can achieve effective student to student interaction. This paper explores the impact of orientation sessions that specifically target the dynamics of online learning in groups. Salmon's conference analysis categories were used to analyse the content of postings made by undergraduate orthoptic students in an asynchronous discussion forum in 2003 before the introduction of these orientation sessions. This was compared with postings made in 2004 in the same units of study following these sessions. Results in 2004 showed significantly fewer postings at the level of individual thinking and more postings at the level of interactive thinking. This fostered productive conferencing, with active involvement of the students without the usual time commitment that is required by the e-moderators to achieve successful learning outcomes.

[Arts LR 4, Mon 4.05pm to 4.20pm]

### **Pattern languages and genres for writing computer science discourse**

**Dai Fei Yang and Peter Goodyear**

How can a successful adjunct grammar program be modelled using pattern languages and genre theory? The authors will first discuss the genre grammar based design for an undergraduate computer science grammar program, using examples of writing a Use Case to illustrate this pedagogical approach. The paper will then introduce the pattern language approach and how this can be combined with genre theory to address students' academic literacy problems. Finally, the paper will discuss the potential use of pattern languages to design reusable programs for academic literacy support in higher education.

[Arts LR 4, Tues 4.10pm to 4.25pm]

### **Personalised records of lifelong learning in the UK: What do our learners want?**

**Jon Yorke and David Croot**

Initiatives funded by the UK Joint Information Systems Committee (JISC) have previously supported the drawing together of learner resources and administrative data in managed learning environment development programmes. More recently, large scale programmes have focused on the potential for integrating institutional record systems to the benefit of the learner as they move between places of study. The JISC funded SHELL Project aims to support the lifelong learner via the integration of institutional record systems and the development of a 'learner record' accessible via a browser based

portal. Ultimately, this learner record portal will also be linked to personalised facilities that support personal and professional development planning for the future, made available to learners long after they leave their place of study. But what do learners want from such a portal? This study reports the findings of a series of focus groups held with a range of stakeholders, identifying the aspects that learners deem important. User control of personal data and a customisable portal environment appear to be key desirable characteristics, and the implications for portal development are discussed.

[Arts LR 4, Tues 4.30pm to 4.45pm]

#### **Knowledge sharing and teacher acceptance of web based learning system**

**Allan H.K. Yuen and Will W.K. Ma**

In response to the challenges of the knowledge society, many organisations understand the importance of knowledge sharing among their employees. They are eager to introduce knowledge management paradigm to facilitate the sharing of knowledge in their organisations. However little is known about the determinants of the individual's knowledge sharing behavior. Taking the knowledge management as an approach to e-learning, the purpose of this case study is to develop an initial understanding of the factors of knowledge sharing behavior through the investigation of individual's acceptance to a web based learning system in a teacher training program. This study also examines the interactions in an e-learning platform in order to explore the motivators and inhibitors of the knowledge sharing process involved.

[Alexander LT, Tues 2.30pm to 2.55pm]

#### **Changing student use and perceptions of learning technologies, 2002-2004**

**Craig Zimitat**

The experiences of 504 students were explored by survey in their first year and their third year of study at university. Compared with first year, student engagement in paid work increased significantly and the number of days spent on campus decreased significantly by third year, though the overall number of hours spent attending classes did not change significantly. There were no significant differences in student levels of satisfaction with teaching or their university experience overall between first year and third year. Student use of information and communication technologies and their perceived usefulness of those technologies in supporting learning increased significantly over the two year period. Gender and age differences were apparent in the use of technologies. Frequency of use of learning technologies correlated with perceived usefulness of the technology. However there was a pattern of volatility in student use of technology over time in which early adopters later abandoned the technology.

[Murdoch LT, Mon 1.30pm to 1.55pm]

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## **Poster presentations**

#### **E-learning for sustainable development: A case study**

Davina Boyd, Rob Phillips, Michael Scott and Goen Ho

#### **Marrying streaming media and asynchronous communication**

Ross Dewstow and Patrick Kunz

#### **The application of massively multiplayer online role playing games to collaborative learning and teaching practice in schools**

Ken Eustace, Mark Lee, Geoff Fellows, Allan Bytheway and Leah Irving

#### **Developing policy to support a new generation of e-learning**

Jonathan Finkelstein

#### **EdNA Online Shared Information Services: Case studies**

Nelly Ivanova

#### **A comparative study on the effectiveness of e-learning at a Malaysian university**

Jowati Juhary

#### **Giving lectures a voice for a cross-cultural audience**

Elicia Lanham and Wanlei Zhou

#### **Project teams go the distance**

Kristeen Lockett and Michelle Strand

#### **Knowledge management: The relevance of storytelling in the management of knowledge in organisations**

Angela Ma Kit Fong and Mike Keppell

#### **Extra skills needed when teaching online**

Mae McSporran and Stuart Young

#### **Achieving flow in an online learning environment**

Jon M. Pearce

#### **Building a CGI interface to WordNet verb data**

Steven D. Tripp

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