

The 23<sup>rd</sup> Annual Conference  
of the Australasian Society for Computers in  
Learning in Tertiary Education

# Who's Learning? Whose Technology?

3–6 December 2006  
The University of Sydney  
Sydney, Australia

## ABSTRACTS

Editors: Lina Markauskaite, Peter Goodyear, Peter Reimann



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This book comprises the abstracts of the keynotes, special sessions, symposia and research papers presented at the 23rd Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education “Who’s Learning? Whose Technology?” All contributions reflect the authors’ opinions and their inclusion in this publication does not necessarily constitute endorsement by the editors. The Appendix comprises the list of other selected conference materials: poster presentations and workshops.

**The 23rd Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education "Who's Learning? Whose Technology?"**

3–6 December, 2006, Sydney, Australia

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## **Foreword: *Who's learning? Whose technology?***

The annual conferences of the Australasian Society for Computers in Learning in Tertiary Education (*ascilite*) bring together delegates with research interests in the broad area of educational technologies, computer-supported learning and tertiary education. This year's conference theme is: *Who's learning? Whose technology?* Conference presenters were encouraged to address one or both these topics by considering some of the questions outlined below, as well as by offering their own interpretations of key issues.

### **Who's learning?**

*How well do we know our students?* How can we ensure we meet learners' real needs and not what we imagine they might need? What do they actually do with all this 'neat stuff'?

*Learning by individuals, groups and teams.* Design for individualised learning is different from design for learning teams and learning communities. Flexibility for the individual and collaboration can be competing goals. How could we reconcile them? Are there good ways of assessing the work of virtual teams and individuals?

*The needs of the iPod/iLife generation – and an aging and diversifying student population.* We are hearing more about the characteristics, habits and demands of the iPod generation – and we need to respond to their expectations – but the student population is older and more diverse than it was 10 years ago. How can podcasting, social technologies, design for diversity and/or other technological, design and pedagogical innovations meet different learning demands?

*What are teachers learning? Organisations? The higher education sector?* We are not just interested in what students learn. What are teachers learning about new ways of teaching? What are their conceptions of learning with technology? How are they coping with the intensification of academic work? What can we say about organisational learning or learning across the whole of higher education, especially with respect to smarter use of educational technologies?

*Who's learning from research?* Good research is all very well, but who is learning from it and how? How do we know? How do we improve the impact of our research and demonstrate that it has effects?

### **Whose technology?**

*How can we plan the articulation of personal and organisational technologies?* Fifteen years ago the challenge for tertiary education institutions was to provide enough computer labs. Now it is equipping smart learning spaces and providing wireless access. As personal technologies become more mobile, ubiquitous and powerful, where will the boundary be between what the institution provides and the learner brings? How are higher education institutions addressing this challenge? What strategies might they adopt? What do reports from foresight or horizon scanning exercises tell us about the future? Do we have successful examples that illustrate the possibilities of integrating mobile personal technologies with smart learning spaces?

*User and activity-centred technology design.* Research and development help us to move towards a user-centred and/or activity-centred educational technology. How far have we advanced in this research area? What successful examples illustrate our current achievements?

*E-learning, e-teaching or e-management?* Some of what goes under the name of e-learning is really e-management or e-administration. Some of it is e-teaching. How much is really about learning? Do we have good research and development examples that celebrate the best of e-learning? What can we learn from critiques of current practice?

*Technology in whose image?* Technology design ‘constructs the user’. What kind of users do we imagine, value and serve? How do we know? What can we do to surface our assumptions about learners and learning?

These contemporary challenges and issues are addressed in the research papers presented at the annual ascilite conference.

## **Review process**

The conference program chairs established two committees: an international scientific committee and a local program committee.

The international scientific committee (board of reviewers) was composed of 103 people with expertise in the area of computer-supported learning and tertiary education. The members came from 11 different countries, with personnel drawn from 25 Australian universities and 17 universities from other countries. The members of the international scientific committee provided academic advice and helped to review and select the best research papers for presentation at the conference. The local program committee, composed of researchers from several Australian universities, helped with program planning, editorial and other program-related matters.

We received 180 papers (108 – full and 72 – concise) and 14 posters from 17 countries. All full and concise papers were peer reviewed in a double-blind review process by the international review team. Each paper was reviewed by at least three reviewers selected from the international board of reviewers. To achieve consistency, reviewers were provided with a *Reviewer’s Guide* and detailed assessment criteria. Reviewers’ comments were then considered by the program chairs. The papers with positive recommendations from at least two reviewers were further reviewed by the program chairs and, if necessary, after additional consultation with the members of the international scientific committee, the best contributions were selected for presentation at the meeting. The overall acceptance rate for refereed papers was just above 65%: 81% in full and 54% in concise paper categories. The only criterion that was used for selection of papers was that of quality and scientific merit.

The international review team provided detailed, formative feedback for the authors. This enabled many good papers to be further elaborated and improved. A subset of the local program committee worked with the authors of accepted papers helping them to address reviewers’ comments, check that review recommendations had been dealt with appropriately and generally improve the quality of their papers. Only those papers that successfully passed all stages of the review and academic editing process are published in the conference proceedings.

To achieve balance between quality and immediacy, some proposers of full and concise papers that reported innovative research in early stages of development, work in progress or initial outcomes of ongoing research were offered a chance to present their results at the ascilite 2006 poster sessions.

The main results of the paper review process are summarised in the table below.

Category	Refereed	Submitted	Full papers		Concise papers		Posters		Rejected
			Accepted	Presented	Accepted	Presented	Accepted	Presented	
Full papers	Yes	108	71	67 (+2)	17	15	13	4	7
Concise papers	Yes	72	-	-	39	38	23	12	10
Posters	No	14	-	-	-	-	14	14	0
Total		194	71	67 (+2)	56	53	50	30	17

The final scientific conference program and CD version of proceedings consists of 120 refereed scholarly papers: 67 papers are full (10–12 pages) and 53 papers are concise (4–6 pages). Two additional full research papers are included in the conference program and web version of the conference proceedings.

These research papers are published in the Conference Proceedings and will be presented for the first time during the meeting, 4th–6th December 2006, in 34 paper sessions and two symposia (30 minutes for each full paper; 20 minutes for each concise).

Additionally, two keynote, three special and two poster sessions (comprising 30 poster presentations) will be held during the conference. Prior to the main conference program (on 3<sup>rd</sup> December, 2006), all conference delegates will have a chance to attend one or more of 11 workshops that were selected from 14 proposals. Summaries of these non-refereed contributions are published in the appendix to the conference proceedings and in this booklet.

We are pleased to note that the standard of research presented at the ascilite 2006 conference is very high. Participation from international researchers from the region and from other countries is also especially strong this year. We are confident that ascilite 2006 will be an important landmark in the field, providing a useful overview of the state of the art, and of emerging research themes and issues.

This would not have been possible without the assistance of a large team of people, many of whom are named in this abstract booklet, though others have also been working behind the scenes. We want to take this opportunity to thank many friends and colleagues who have assisted in the process, including the ascilite executive (led by President, Cathy Gunn), the sponsors and exhibitors, local organising committee, program committee, international scientific committee, conference helper team, keynote speakers, workshop organisers, convenors of symposia and special sessions, presenters and delegates. Our special thanks go to Mandy Newton, who has been the mainstay of the conference organising team, and of CoCo in its first three years.

Lina Markauskaite, Peter Goodyear and Peter Reimann

The University of Sydney, Australia  
3-6 December, 2006

## Contents

<b>Foreword: Who's learning? Whose technology? .....</b>	<b>v</b>
<b>Contents .....</b>	<b>viii</b>
<b>Keynotes.....</b>	<b>1</b>
Orchestrating integrated learning scenarios	
<i>Pierre Dillenbourg</i> .....	1
Assessing who is learning and how	
<i>J. Michael Spector</i> .....	2
<b>Special sessions.....</b>	<b>2</b>
E-learning for campus-based universities: Engaging the executive	
<i>Rob Ellis, session chair, Shirley Alexander, Eddie Gulc, Sandra Wills</i> .....	2
ascilite and the Carrick Resource Identification Network project	
<i>Geraldine Lefoe, Meg O'Reilly, Jenny Millea</i> .....	3
Publishing your research in journals: 'Meet the editors'	
<i>Catherine McLoughlin, Roger Atkinson, Gráinne Conole, John Hedberg</i> .....	4
<b>Symposia.....</b>	<b>5</b>
Realities of reuse, migration and repurposing of e-learning designs	
<i>Mary-Jane Mahony</i> .....	5
Intercultural e-learning: Experiences of research in a Sino-UK context	
<i>David McConnell, Gordon Joyes</i> .....	6
<b>Abstracts of full and concise papers.....</b>	<b>7</b>
The use of a visual learning design representation to document and communicate teaching ideas	
<i>Shirley Agostinho</i> .....	7
Whose technology enables learning through discussions? The 'shoutboard': A new design for asynchronous discussions	
<i>Rozz Albon, Lina Pelliccione</i> .....	7
Dissemination of innovations: A case study	
<i>Shirley Alexander</i> .....	8
A blended approach to collaborative learning: Can it make large group teaching more student-centred?	
<i>Belinda Allen, Alan Crosky, Iain McAlpine, Mark Hoffman, Paul Munroe</i> .....	9
Spatial imaginings: Learning and identity in online environments	
<i>Reem Al-Mahmood</i> .....	9
E-learning: Do our students want it and do we care?	
<i>Leonie Arthur, Bronwyn Beecher, Roslyn Elliott, Linda Newman</i> .....	10
Audience response systems in practice: Improving Hong Kong students' understanding of decision support systems	
<i>David A. Banks, Ann Monday</i> .....	10
Collaboration for inter-cultural e-learning: A Sino-UK case study	
<i>Sheena Banks</i> .....	11
Collaborative learning: Some possibilities and limitations for students and teachers	
<i>Matt Bower, Debbie Richards</i> .....	11
An Agile method for developing learning objects	
<i>Tom Boyle, John Cook, Richard Windle, Heather Wharrad, Dawn Leeder, Rob Alton</i> ..	12

Recorded lectures: Looking to the future	
<i>Kathy Buxton, Kerry Jackson, Melissa deZwart, Len Webster, David Lindsay</i> .....	13
Teaching with technology: Using online chat to promote effective in-class discussions	
<i>Leanne Cameron</i> .....	13
Everyone's learning with podcasting: A Charles Sturt University experience	
<i>Anthony Chan, Mark J.W. Lee, Catherine McLoughlin</i> .....	14
A participatory design approach to the development of online tutor training materials: A case study from China	
<i>Zehang Chen</i> .....	14
Driving online education: The Swedish Net University – A case study in purpose and pedagogy	
<i>Michael Christie</i> .....	15
Real use research evaluation of an online essay writing module: Information literacy e-learning modules project	
<i>Dawn Coburn, Dave Keen, Wendy Ritson-Jones, Bronwyn Hegarty, Jenny McDonald</i> .	15
Learning with wireless mobile devices and social software	
<i>Thomas Cochrane</i> .....	16
Argumentation and text-based conferencing: Who is learning and what is being learned?	
<i>Caroline Coffin, Ann Hewings, Sarah North</i> .....	16
An in-depth case study of students' experiences of e-learning – how is learning changing?	
<i>Gráinne Conole, Maarten de Laat, Teresa Dillon, Jonathan Darby</i> .....	17
Analysing online discussions: What are students learning?	
<i>Deborah Cotton, Jon Yorke</i> .....	18
An experience with conducting a role-play in decision making for a food and nutrition policy course	
<i>Pippa Craig, Leah Bloomfield</i> .....	18
Who's learning and how? Researching the learner experience	
<i>Linda Creanor, Kathryn Trinder, Doug Gowan, Carol Howells</i> .....	19
Using fMRI to explore interactivity and cognition: A methodological case study	
<i>Barney Dalgarno, Gregor Kennedy, Sue Bennett</i> .....	19
Whose assessment in a problem based learning medical program?	
<i>Peter Davy</i> .....	20
Re-purposing an online role play activity: Exploring the institutional and pedagogical challenges	
<i>Elizabeth Devonshire</i> .....	20
Learner identities in transition: Getting to know our students better through a comparative investigation of two British and Australian postgraduate programs	
<i>Sophie di Corpo, Siân Bayne</i> .....	21
Taking ownership of technology: Lecturers as LMS learners	
<i>Iain Doherty, Michelle Honey</i> .....	22
Using educational technologies to understand how learners solve problems	
<i>Kristine A. Elliott, Gregor E. Kennedy</i> .....	22
Personality type and learning environments: Two case studies	
<i>Ainslie E. Ellis</i> .....	23
Perspectives of stakeholders on e-learning in science education at university	
<i>Robert A. Ellis, Tom Hubble, Andrellyn C. Applebee, Mary Peat</i> .....	23
Fostering communities of practice during the creation of an online classroom-based simulation	
<i>Brian Ferry, Lisa Kervin</i> .....	24

Sustaining and transferring curriculum and pedagogical innovation through establishing communities of practice <i>Robert Fox, Lee Yeung, Nancy Law, Allan Yuen, Alison Yeung</i> .....	24
Iterative learning: Self and peer assessment of group work <i>Mark Freeman, Diane Hutchinson, Lesley Treleaven, Chris Sykes</i> .....	25
Sharing open courseware content through learning objects standards <i>Sergio Freschi, Rafael Calvo</i> .....	25
To post or not to post: Undergraduate student perceptions about participating in online discussions <i>Philippa Gerbic</i> .....	26
Prototyping a wholly online IT unit <i>Annegret Goold, Naomi Augar</i> .....	26
Who's learning? Responding to the needs of a culturally diverse world of online learners <i>Andrea Hall</i> .....	27
Professional development for online teaching practices <i>Julia Hallas</i> .....	27
E-learning adoption: Staff development and self-efficacy <i>Bronwyn Hegarty, Merrolee Penman, Dawn Coburn, Oriel Kelly, Cheryl Brown, Beverley Gower, Grant Sherson, Maurice Moore, Gordon Suddaby</i> .....	28
Using the internet for professional development: The experience of rural and remote professionals <i>Anthony Herrington, Jan Herrington</i> .....	28
Innovation through action learning <i>Beth Hobbs, Paula Williams, Louise Turnbull</i> .....	29
New students, new learning, new environments in higher education: Literacies in the digital age <i>Dale Holt, Ian Smissen, Stephen Segrave</i> .....	29
Designing for disruption: Remodelling a blended course in technology in (language) teacher education <i>Debra Hoven</i> .....	30
Learning, study and review methods 101: A fun way to learn and study complex theoretical content <i>Cheryl Howard</i> .....	31
Reflective practice in lesson design <i>Chun Hu, Miriam Weinel</i> .....	31
Online facilitation: Strategies for gaining engagement in different OLEs <i>Chris Hughes, Sophie di Corpo, Lindsay Hewson</i> .....	32
Analysing the efficacy of blended learning using Technology Enhanced Learning (TEL) and m-learning delivery technologies <i>Kevin Johnson, Cathal McHugo, Timothy Hall</i> .....	32
Towards a reference model for the personal learning environment <i>Mark Johnson, Paul Hollins, Scott Wilson, Oleg Liber</i> .....	33
Who will own the new VLE? Sharing practice, problems and alternative solutions <i>Chris Jones, Gráinne Conole</i> .....	33
An activity theory approach to the exploration of tutors' perceptions of effective online pedagogy <i>Gordon Joyes</i> .....	34
Reinventing and reinvigorating instructional design: A theory for emergent learning <i>Elena Kays, Rod Sims</i> .....	34

Questioning the net generation: A collaborative project in Australian higher education	
<i>Gregor Kennedy, Kerri-Lee Krause, Kathleen Gray, Terry Judd, Susan Bennett, Karl Maton, Barney Dalgarno, Andrea Bishop</i> .....	35
A partnership for iPod pedagogy: Using the technology of millennial learners across educational contexts	
<i>Lisa Kervin, Doug Reid, Jeff Vardy, Carroll Hindle</i> .....	36
The role of problematizing in online knowledge building	
<i>Ming Lai</i> .....	36
Monitoring e-learning environments through analysing web logs of institution-wide e-learning platforms	
<i>Paul Lam, Christina Keing, Carmel McNaught, Kin-Fai Cheng</i> .....	37
Moving towards a university-wide implementation of an ePortfolio tool	
<i>Sarah Lambert, Linda Corrin</i> .....	37
Modelling blended learning environments: Designing an academic development blog	
<i>Geraldine Lefoe, Wendy Meyers</i> .....	38
Who's designing what for whom? Comparing taxonomies in web-based educational design galleries	
<i>Tim Lever</i> .....	38
Reusing learning designs: Role play adaptations of the Mekong and Ha Long Bay e-Sim	
<i>Kate Lloyd, Melissa Butcher</i> .....	39
Educational animation: Who should call the shots?	
<i>Richard Lowe</i> .....	39
Is role-play an effective teaching approach to assist tertiary students to improve teamwork skills?	
<i>Joseph Luca, Deanna Heal</i> .....	40
Bringing e-learning home: An experiment in embedding e-learning using departmental e-learning advocates	
<i>Brett Lucas</i> .....	40
iPod, uPod? An emerging mobile learning tool in nursing education and students' satisfaction	
<i>Margaret Maag</i> .....	41
Who is learning? A preliminary study of an online e-learning dissemination strategy	
<i>Mary Jane Mahony</i> .....	41
Educational design and online support for an innovative project-based course in engineering design	
<i>Iain McAlpine, Carl Reidsema, Belinda Allen</i> .....	42
What do first year students think about learning graphics packages?	
<i>Joshua McCarthy</i> .....	42
Chinese higher education teachers' conceptions of e-Learning: Preliminary outcomes	
<i>David McConnell, Jianhua Zhao</i> .....	43
Electronic delivery of oral feedback on graphic design projects	
<i>Coralie McCormack, Mary-Jane Taylor</i> .....	43
The role of e-teaching in e-learning	
<i>Jacquelin McDonald</i> .....	44
Learning object: A new definition, a case study and an argument for change	
<i>Jenny McDonald</i> .....	44
You, me and iLecture	
<i>Julie McElroy, Yvette Blount</i> .....	45

Beyond marks and measurement: Developing dynamic and authentic forms of e-assessment	
<i>Catherine McLoughlin, Joe Luca</i> .....	45
Online student contracts to promote metacognitive development	
<i>Mark McMahon, Joe Luca</i> .....	46
The ‘copy and paste’ function: A flawed cognitive tool in need of redesign	
<i>Michael Morgan, Gwyn Brickell, Barry Harper</i> .....	46
Benchmarking e-learning in UK higher education	
<i>Derek Morrison, Terry Mayes, Eddie Gulc</i> .....	47
Increasing success in first year courses: Assessment re-design, self-regulation and learning technologies	
<i>David Nicol</i> .....	47
Professional development for professional developers: Who’s learning about e-learning from whom?	
<i>Margaret O’Connell, Robyn Benson, Gayani Samarawickrema</i> .....	48
The trial of learning objects: Exploring the design and delivery of VTE courses with learning objects	
<i>Ron Oliver, Mark McMahon, Peter Higgs, Rose Shum, Lisa Wait, Dominic Lou</i> .....	48
How does hypermedia support learning? The role of different representational formats and varying levels of learner control for the applicability of multimedia design principles	
<i>Maria Opfermann, Peter Gerjets, Katharina Scheiter</i> .....	49
Online student portfolios for demonstration of engineering graduate attributes	
<i>Stuart Palmer, Wayne Hall</i> .....	50
Mediated electronic discourse and computational linguistic analysis: Improving learning through choice of effective communication methods	
<i>Rachel Panckhurst</i> .....	50
A pragmatic and strategic approach to supporting staff in inclusive practices for online learning	
<i>Elaine Pearson, Tony Koppi</i> .....	51
Going with the grain: Mobile devices in practice	
<i>John Pettit, Agnes Kukulska-Hulme</i> .....	51
Implementing new technologies across the organisation: The LAMS@Macquarie project	
<i>Robyn Philip, Angela Voerman</i> .....	52
Tools used in Learning Management Systems: Analysis of WebCT usage logs	
<i>Rob Phillips</i> .....	52
Repurposing an online tutor training resource	
<i>Jenny Pizzica, Mary Jane Mahony, Elizabeth Devonshire</i> .....	53
Learning from Web 2.0 practices: A tool to support real-time student collaboration	
<i>Tim Plaisted, Stuart Irvine</i> .....	53
Supporting peer assessment of individual contributions in groupwork	
<i>Richard Raban, Andrew Litchfield</i> .....	54
Fun and feedback at the press of a button	
<i>Debbie Richards, Catherine Braiding, Alan Vaughan</i> .....	54
The evolution of audiographics: A case study of audiographics teaching in a business faculty	
<i>Steve Rowe, Allan Ellis, Tran Quoc Bao</i> .....	55
E-Scholars: Staff development through designing for learning	
<i>Diane Salter</i> .....	55
Design and evaluation of an e-learning environment to support the development and refinement of clinical reasoning and decision-making	
<i>Justin Newton Scanlan, Catherine McLoughlin, Nicola Hancock</i> .....	56

Impact on student learning: Student evaluations of online formative assessment in fluid mechanics <i>Karen M. Scott, Mary-Helen Ward, Graeme Wood</i> .....	57
Design-based research and the learning designer <i>Deidre Seeto, Jan Herrington</i> .....	57
Integrating culture in the second language curriculum through a three-dimensional virtual reality environment <i>Sachiyo Sekiguchi, Paul Gruba, Abdul Rahman Al-Asmari</i> .....	58
How experienced teachers learn in the information age <i>Natalie Senjov-Makohon</i> .....	58
Why don't students attend lectures and what can be done about it through using iPod nanos? <i>Susan J. Shannon</i> .....	59
Implementing e-learning across a faculty: Factors that encourage uptake <i>Paul Sheehy, Gerard Marcus, Frederico Costa, Rosanne Taylor</i> .....	59
Persistent technologies: Why can't we stop lecturing online? <i>Stephen Sheely</i> .....	60
Blogging for learning: Integrating social networks for staff development <i>Rod Sims, Diane Salter</i> .....	60
Student learning processes using an online PBL module in an art and design education course <i>Kim Snepvangers, Iain McAlpine</i> .....	61
Impact of video recorded lectures among students <i>Swee Kit Alan Soong, Lay Kock Chan, Christopher Cheers, Chun Hu</i> .....	61
Influence of teacher beliefs on web-enhanced learning experiences: Learners and teachers <i>Caroline Steel</i> .....	62
Pragmatic approach to learning materials <i>Denise Sweeney, Willy Sher</i> .....	62
Computer-mediated interaction in context <i>Mary Thorpe, Steve Godwin</i> .....	63
Podcasting, student learning and expectations <i>Belinda Tynan, Stephen Colbran</i> .....	63
Describing a design pattern: Why is it not enough to identify patterns in educational design? <i>Christian Voigt, Paula M.C. Swatman</i> .....	64
Thoughts on blogging as an ethnographic tool <i>Mary-Helen Ward</i> .....	64
Use of visualisation software to support understanding of chemical equilibrium: The importance of appropriate teaching strategies <i>Anula Weerawardhana, Brian Ferry, Christine Brown</i> .....	65
Student evaluations of e-learning technologies in undergraduate psychology: A blended model for the future <i>Fiona A. White, Martin Daly, Karen M. Scott</i> .....	65
Moving from face-to-face to online classrooms: The reflective university teacher <i>Faye Wiesenberg, Elizabeth Stacey</i> .....	66
The Lectopia service and students with disabilities <i>Jocasta Williams</i> .....	66
Throwing a pebble into the pond: E-portfolios and student engagement <i>Hazel Willis, Phil Gravestock, Martin Jenkins</i> .....	67
Facilitating uptake of online role play: Reusability, learning objects and learning designs <i>Sandra Wills, Anne McDougall</i> .....	67

Gathering online representations of practice about assessment for use as a professional development tool: A case in progress <i>Gail Wilson, Rosemary Thomson, Janne Malfroy</i> .....	68
At the limits of social constructivism: Moving beyond LMS to re-integrate scholarship <i>Lisa Wise, James Quealy</i> .....	68
Understanding complex calculations: Automated spreadsheets with built-in feedback <i>Graeme Wood, Mary-Helen Ward</i> .....	69
Designing reusable online clinical reasoning templates: A preliminary evaluation <i>Helen Wozniak, Mark Hancock, Joanne Munn, Gosia Mendrela</i> .....	70
Learning through online discussions: A focus on discourse analysis and language functions <i>Dai Fei Yang, Peter Goodyear</i> .....	70
Teaching through technology-enhanced environments in higher education: Moderating for effective computer conferencing <i>Maria Zenios</i> .....	71
Analysing teaching design repositories <i>Danyu Zhang, Rafael Calvo, Nicholas Carroll, John Currie</i> .....	71
A lexical analysis of 1995, 2000 and 2005 ascilite conference papers <i>Craig Zimitat</i> .....	72
<b>Appendix</b> .....	<b>72</b>
<b>Poster presentations</b> .....	<b>72</b>
The Merlin Affair: Addressing students' needs in learning media law through the use of multimedia environments <i>Des Butler</i> .....	72
Understanding the impact of tablet PCs on student learning and academic teaching <i>Steve Clark, Lucy Taylor, Joanne Pickering, Andrew Wait</i> .....	72
New activity centred technology challenges students of midwifery: An evaluation <i>Ingrid D'Souza, Maria Miller, Jeremy Gauder, Ian Kershaw</i> .....	72
Developing online postgraduate coursework to promote change in animal industries <i>Hannah Forsyth, Chris Moran, Jaime Gongora, Ruth Laxton, Julius van der Werf</i> ..	72
"I haven't studied for twenty years and now I have to do it online": Online orientation for postgraduate students in veterinary science <i>Hannah Forsyth, Meg Vost, Jenny-Ann Toribio, Sarah Graham, Karen Black, Ruth Laxton</i> .....	72
Benchmarking e-learning: The UK experience <i>Eddie Gulc</i> .....	73
Reducing staff and student workload: Redevelopment of an online law unit <i>Kerryn Jackson, Bill Potter, David Lindsay, Len Webster, Kathy Buxton, Melissa deZwart</i> .....	73
I want to tell you a story... <i>Martin Jenkins, Kenny Lynch</i> .....	73
Investigating teachers authoring their own learning designs <i>Matthew Kearney, Anne Prescott, Kirsty Young</i> .....	73
Learning to teach online: Training remote facilitators in postgraduate veterinary science programs <i>Ruth Laxton, Hannah Forsyth, Jenny-Ann Toribio</i> .....	73

The collaborative work between learning technologists and academics in implementing online learning <i>Yik Sheng Lee, Siaw Way Poh</i> .....	73
Semi-automated assessment and workload expectation mapping <i>Melinda Lewis, Mary Jane Mahony, Ann Poulos</i> .....	73
Do we know what skills our students think are being tested in exams? <i>Jennifer Lingard, Laura Minasian-Batmanian, Ian Cathers, Mary-Jane Mahony, Gilbert Vella</i> .....	73
Team Contribution Tracking System (TeCTra) for assessment of individual contributions in groupwork <i>Andrew Litchfield, Ryszard (Richard) Raban</i> .....	73
A French Master's degree in e-learning: Are the students' needs met? <i>Debra Marsh, Rachel Panckhurst</i> .....	73
Interactions of students in online graduate courses <i>Joyce McCauley, Susan Wegmann, Catherine Stoicovy, Mary Robbins</i> .....	73
Podcasting and education: Time to start listening <i>Leon Newnham, Charlynn Miller</i> .....	73
Evaluation of genetics educational technologies used by science teachers <i>Amy Nisselle, Gregor Kennedy, Sylvia Metcalfe, MaryAnne Aitken</i> .....	73
There's more to it than instructional design: The role of individual characteristics in hypermedia learning <i>Maria Opfermann, Peter Gerjets</i> .....	74
Bringing together accessibility research and enterprise activities <i>Elaine Pearson, Steve Green</i> .....	74
Pilot study to review use of WebCT in taught units <i>Lynnae Rankine, Janne Malfroy</i> .....	74
Living English simulation learning for non-native English speakers <i>David Ross, Fiona McMullen</i> .....	74
Debating pain: A collaborative online group activity <i>Grace Tague, Liz Devonshire, Allan Molloy, Stephen Loftus, Philip Siddall</i> .....	74
What is ED? <i>Elizabeth Tuckerman</i> .....	74
All the world's a stage: Using dramatised scenarios to foster discussion in online management courses <i>Keith Tyler-Smith</i> .....	74
21st Century higher education management: Networked educational management <i>Philip Uys</i> .....	74
Developing effective digitally-enhanced blended learning environments: A comparative study of Australian universities <i>Philip Uys, Janet Buchan, Linda Ward</i> .....	74
Blending synchronous and asynchronous forms of communication in an online teacher education class <i>Miriam Weinel, Chun Hu</i> .....	74
Online learning modules: Does one version fit all? <i>Alexandra Yeung, Siegbert Schmid, Roy Tasker</i> .....	74
Multimedia learning and the World Wide Web: Considerations for learners with a mental retardation <i>Peter Zentel, Maria Opfermann, Jan Krewinkel</i> .....	74
<b>Workshops</b> .....	<b>75</b>
What makes blended learning "good"? A conceptual model supported by real examples <i>Josie Csete, Paula Hodgson, Peter Duffy</i> .....	75

Online information literacy e-learning modules from the OIL project: Project background, module use, and adaptation for use in new contexts <i>Bronwyn Hegarty, Jenny McDonald, Dawn Coburn</i> .....	75
Designing engaging online learning experiences <i>Anouk Janssens Bevernage, Sue Dark</i> .....	75
Architectures for effective online learning and performance <i>Elena Kays, Rod Sims</i> .....	75
Giving effective and interactive presentations <i>Tony Koppi, Elaine Pearson</i> .....	75
How to develop 'on-demand and on-the-go' ubiquitous educational multimedia for connected communities <i>Margaret M. Maag</i> .....	75
Embedding quality guidelines into e-learning practice <i>John Milne, Andrew Higgins</i> .....	75
A comprehensive introduction to Elluminate Live! A Web browser based synchronous learning and teaching environment <i>Stephen Rowe, Allan Ellis</i> .....	75
Course re-design within a community of practice model <i>Diane Salter</i> .....	75
Using iPods & iTrips as knowledge acquisition tools for problem-based learning in the workplace <i>Paula Williams, Beth Hobbs</i> .....	75
Improving your publications profile <i>Craig Zimitat</i> .....	75

## **Keynotes**

### **Orchestrating integrated learning scenarios**

**Pierre Dillenbourg**

Swiss Federal Institute of Technology, Switzerland

Higher education institutions have mostly experimented with two approaches to e-learning: distance and blended. Blended learning refers to the juxtaposition of face-to-face and computer-mediated activities, while distance education only includes the latter. The approaches that consider e-learning environments as stand-alone products failed to have a strong impact on pedagogical practices in higher education. Meanwhile, researchers have developed scenarios for integrated learning. We define integrated learning by reference to four characteristics.

Integrated learning refers to the organic interleaving of computerized activities (e.g. simulations, forums, exercises) with the diverse activities that occur in 'on-campus' courses (e.g. lectures, exercises, practical work, or even field trips). These activities are integrated from a pedagogical viewpoint, as they constitute a consistent scenario or script. They are also integrated from a computational viewpoint as they are related by some kind of workflow environment (e.g. results of teamwork with the simulation are synthesized for a subsequent class-wide argumentation seminar).

A scenario includes multiple activities, occurring at various social levels: individual activities (e.g. reading, writing summary), group activities (solving problems with a peer; conducting a project with other students, ...) and class-wide activities (lecturing, debriefing, discussion, ...). For too long, learning technology research has opposed the individualistic focus of instructional engineering with the social focus of computer-supported collaborative learning (CSCL). Integrated learning sidesteps this dichotomy and combines any activity form that is relevant for the learning objectives.

In these scenarios, the teacher is not in the background, as in many e-learning environments. Instead the teacher is the conductor: he/she orchestrates the sequence of activities and may change the scenario in real time. If it is true that technical constraints reduce the teacher's freedom to adapt his or her plan on the fly, we have to change the technology... not the teacher's freedom.

These scenarios do not occur in a virtual world ('virtual learning environment', 'virtual campus',...) but in specific physical spaces (classroom, labs, field, home,...). Integrated learning addresses the relationship between learning activities and their physical environment, for instance by using mobile technologies (e.g. location-based applications) or embedding technologies into furniture, buildings or artefacts. Computer science has shifted towards more physical kinds of interaction, through concepts such as 'tangibles', 'the disappearing computing', 'ubiquitous computing', 'wearables' or 'roomware'. The affordances of these emergent technologies for educational goals are still being discovered.

## **Assessing who is learning and how**

**J. Michael Spector**

Learning Systems Institute  
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Most would agree that it is important to assess the progress of learners so as to help learners identify areas in which they might focus attention and to help instructors and designers identify areas in which they might consider refinements in future offerings. Likewise, most would probably agree that within the educational technology community there has been a trend to use new and innovative technologies to support ever more complex learning situations. Assessing the progress of learning with regard to simpler learning tasks using well established technologies is a problem that is well understood. However, when learning involves complex and ill-structured problem solving tasks (e.g., crisis management, environmental planning, engineering design, medical diagnosis, etc.) and when powerful technologies are available to support learning, it becomes a significant challenge to determine how individual learners are doing and whether particular instructional approaches, strategies and technologies are effective.

In this presentation, an assessment methodology relevant to this problem will be presented and discussed. The methodology is based on the notion that how an individual thinks about representative ill-structured problems will reflect relative levels of comprehension and competency. Annotated causal influence diagrams are used to capture problem conceptualizations and used to indicate progressive development of understanding based on previous conceptualizations and those of highly experienced problem solvers. A Web-based tool will be demonstrated along with preliminary results of using this methodology and the tool.

### ***Special sessions***

## **E-learning for campus-based universities: Engaging the executive**

**Rob Ellis, session chair**

The University of Sydney, Australia

**Shirley Alexander**

University of Technology, Sydney, Australia

**Eddie Gulc**

Higher Education Academy, England

**Sandra Wills**

University of Wollongong, Australia

E-learning advocates in campus-based universities in Britain and in Australia are having difficulty helping senior budget holders and strategic planners articulate a vision for e-learning in a campus-based experience. Too often sensible plans for embedding e-learning support and infrastructure in the learning and teaching systems of campus-based universities are put to one side because there is

insufficient confidence by the executive of being able to justify why such investment is needed.

This can be as simple a problem as being unable to talk about e-learning and its contribution to the whole student learning experience convincingly for non-specialists. Further adding to such confusion is the fact that academics at the executive level may still hold old conceptions of e-learning being predominately about distant learning and can not envision why or how e-learning should be part of the reputation of a predominately campus-based institution.

This special discussion session at ascilite 2006 will discuss the nature of this phenomenon and strategies for how to begin to talk about and plan for integrated e-learning experiences in which e-learning is part of a more meaningful whole. Ideas and understandings that help non-specialists in the executive will be sought in discussion with the audience and the panelists. The experience of British universities engaging in an international benchmarking program and the experience of Australian universities grappling with these problems will provide a substantial framework in which to discuss the issues.

The panellists have significant and diverse experience:

- *The chair, Associate Professor Rob Ellis*, is Director of eLearning at the University of Sydney.
- *Professor Shirley Alexander* is about to take up a position as Deputy Vice-Chancellor (Teaching, Learning and Equity) at the University of Technology.
- *Eddie Gulc* is Senior Advisor for eLearning in the Higher Education Academy in England.
- *Professor Sandra Wills* is Director of CEDIR at the University of Wollongong.

## **ascilite and the Carrick Resource Identification Network project**

**Geraldine Lefoe, Meg O'Reilly**

Executive members

ascilite, Australasian Society for Computers in Learning in Tertiary Education, Australia

**Jenny Millea**

Education.au, Australia

ascilite, in partnership with education.au and ACODE, have completed a preliminary investigation for this project with The Carrick Institute of Learning and Teaching in Higher Education. This session will provide an overview of ascilite's contribution and will also explore education.au's models of use to engage higher education. We will call for expressions of interest from ascilite members to contribute to the next stage of the project "*An identification and evaluation of key success factors and issues in the use of Digital Repositories for enhancing teaching and learning in national and international settings*".

The initial focus of the ascilite involvement in this project was to develop a map of the current landscape of resource information networks available both nationally and internationally. This overview identified key players, key resources, key institutions and the key issues in relation to digital repositories. The landscape

provided a perspective of what, when, who, how, and why digital repositories are becoming important as the higher education sector undergoes change.

This overview of current practice and identification of key players was presented to a think tank forum of leaders from key organisations to identify directions for the future. ascilite will play an integral role in Stage 2 of this project, which will be conducted over the next 2 years. The focus of the ascilite involvement will be to further explore and evaluate the key success factors and issues in the utilisation of resource information networks. In particular an evaluation will be conducted of the key issues and success factors for higher education in both national and international settings related to:

- user needs and contexts of use for resource information networks;
- the reuse of learning objects housed in resource information networks;
- quality assurance with particular emphasis on the peer review of resources housed in resource information networks;
- incentives and rewards for users to engage in resource information networks.

During this session education.au will present their initial models of use. In addition, ascilite members will be invited to give their input to these and to indicate their wish to be involved on consultative sub-groups in the second stage of this project. Sub-groups will be involved in the evaluation and assessment of the key issues and success factors for resource information networks and the subsequent generation of recommendations to inform the larger project.

## **Publishing your research in journals: 'Meet the editors'**

**Catherine McLoughlin, Roger Atkinson**

Australasian Journal of Educational Technology, Australia

**Gráinne Conole**

Open University, ALT-J: Research in Learning Technology, UK

**John Hedberg**

Macquarie University, Educational Media International, Australia

We will concentrate this special session upon the interests of authors who have reached, or will soon reach, this stage with a research project (Pannell, 2002)<sup>a</sup>:

*You've posted in your paper  
To a journal of repute  
And you're hoping that the referees  
Won't send you down the chute*

You will meet the editors of three international journals publishing in educational technology and related areas:

- *Professor Gráinne Conole*, Open University, UK  
ALT-J: Research in Learning Technology  
<http://www.tandf.co.uk/journals/titles/09687769.asp>

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<sup>a</sup> Pannell, D.J. (2002). Prose, psychopaths and persistence: Personal perspectives on publishing. Paper presented at the 46th Annual Conference of the Australian Agricultural and Resource Economics Society, Canberra, 13-15 February. <http://www.general.uwa.edu.au/u/dpannell/prose.htm>.

- *Professor John Hedberg*, Macquarie University  
Educational Media International  
<http://www.tandf.co.uk/journals/routledge/09523987.html>
- *Associate Professor Catherine McLoughlin* and *Dr Roger Atkinson*  
Australasian Journal of Educational Technology  
<http://www.ascilite.org.au/ajet/>

To enable an interactive session with time for numerous questions and comments, it will be structured into three sections, each commencing with a 3-4 minute opening statement from each journal, followed by 10-15 minutes discussion:

- *Journal policies.* What does this journal offer you as an author? Topics may include kinds of articles sought (empirical, review, 'long', 'short', etc), the journal's publishing strategy (open access versus commercial), copyright and self archiving policies, and its measures of publishing success (impact factor, search engine profile, numbers of subscribers, hit counts, etc);
- *Journal procedures.* What do the editors do upon receiving a submission? Topics may include editorial screening, selection of reviewers, numbers of reviewers, advice to reviewers, turnaround times for the review process, confidentiality of the review process, routine checks for self plagiarism, role of search engines, etc;
- *Journal feedback to authors.* What do editors do to help authors after the review process? Topics may include the commonest and most important features of feedback to authors (whether accepted or rejected), how editors take into account inter-reviewer differences, how editors try to improve an accepted paper, and how editors may help you to maximise your prospects for a successful resubmission to the same or another journal.

In this session we wish to project an encouraging and supportive view of the editorial role. Editors, and reviewers, are not there as all powerful, ruthless guardians of high academic rigour, putting down all authors except the lucky or highly ranked few. The more important role in relation to authors is as advocates, developers, coaches, even 'guides on the side'. Editors do have other roles that are also important to authors, so we will use a little time, in 'Journal policies', to discuss scholarly publishing as an industry and how societies, editors, libraries and the commercial world have responded to the ICT revolution.

## ***Symposia***

### **Realities of reuse, migration and repurposing of e-learning designs**

**Mary-Jane Mahony**

University of Sydney, Australia

Successful dissemination of e-learning designs and digital resources created to support them implies real use by others. Continuing discourse at institutional and national level on strategies for dissemination implies that observed reuse remains limited. To achieve this on a broad scale benefits must be greater than the efforts of meeting the challenges faced. The goals of this symposium are to:

- Bring together people who have either experienced a migration/ reuse/ repurpose and lived to tell the tale and reflect on the experience, and/or who have researched such lived experiences;
- Promote discussion about experiences, issues and recommendations for facilitating use in universities of existing e-learning designs and the digital resources created to support them.

The realities, rather than the rhetoric, of dissemination, adaptation and use will be the focus of this symposium.

**Keywords:** reuse, repurposing, adaptation, migration, dissemination, e-learning, role plays, staff development

## **Intercultural e-learning: Experiences of research in a Sino-UK context**

**David McConnell**

Lancaster University, UK

**Gordon Joyes**

University of Nottingham, UK

This Symposium presents some of the research of members of the eChina-UK programme. The programme is funded in the UK by the Higher Education Funding Council for England, and its purpose is to bring about cultural awareness and good pedagogic practice between teachers and higher education institutions in the UK and China. Collaboration between UK and China teachers and researchers is a key feature of the programme.

**Keywords:** e-learning, cultural awareness, inter-cultural e-learning, teachers' development

## **Abstracts of full and concise papers**

### **The use of a visual learning design representation to document and communicate teaching ideas**

**Shirley Agostinho**

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University of Wollongong

A learning design is a representation of teaching and learning practice documented in some notational form so that it can serve as a model or template adaptable by a teacher to suit his/her context. This paper presents a work-in-progress of a research study that is examining how a learning design representation developed in an Australian federally funded project known as the Learning Designs project ([www.learningdesigns.uow.edu.au](http://www.learningdesigns.uow.edu.au)) is being used. Eleven participants were interviewed to investigate how they are using the learning design representation and how such a representation could be improved. Preliminary findings indicate that the visual characteristic of this learning design representation is one of its main strengths. The visual element enables a learning design to be summarised so it can serve as a “talking point” during the design process, it can be used as a communication device to share pedagogical strategies, and it can also serve as a personal reflection tool. In-depth analysis of the interviews is currently being conducted. The results will inform the refinement of the learning design representation and make a contribution towards the development of a notation system as there is currently no consistent notation system for learning designs in education.

**Keywords:** learning design, learning design representation

### **Whose technology enables learning through discussions? The ‘shoutboard’: A new design for asynchronous discussions**

**Rozz Albon**

Mirri Campus, Sarawak  
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**Lina Pelliccione**

Faculty of Education, Language Studies & Social Work  
Curtin University of Technology

The literature confirms that learning occurs through discussions. However, the question of ‘how’ discussions are conducted in an online environment continues to challenge educators. Technology has recapitulated a discussion approach to aid learning by building tools to enable discussions between multiple users. There appears to be a short supply of research which considers whether these current technologies used in the common Learning Management Systems (LMS) and computer conferencing (CC) enhance or limit learning. The cognitive processing

required of learners when they engage in the common threaded messages on many of the LMS platforms, is laboured and cognitively demanding. The structure and content appears to be driven by the need for e-management and e-administration, relegating learning to a secondary position. This paper discusses the psychological reading process and how, if used to drive the technology, the reading and processing of content within discussions may be accessed more easily and expanded to include debate and compare and contrast focussed discussions, thus minimizing the cognitive work required for reading posted discussions. The level of interactivity and sociability is also examined. The rationale, development, trial and evaluation of the 'shoutboard' are reported.

**Keywords:** online learning, discussions, cognitive processing

## **Dissemination of innovations: A case study**

**Shirley Alexander**

Institute for Interactive Media and Learning  
University of Technology Sydney

This paper examines three questions related to the dissemination of innovations in higher education, drawing on a review of the literature on the nature of innovations and on a case study of an innovative online project that has been widely disseminated. The first question seeks to review the question of what constitutes an innovation in teaching and learning in higher education. The second and third questions seek to understand the process of dissemination of such innovations in teaching and learning, and to shed some light on what developers of innovations might do to maximize the take up of innovations.

The project in the case study has been clearly demonstrated to have been widely disseminated beyond both the origin of the project and in new marketplaces. The project was publicised using a multi-faceted distribution mechanism involving presentations at institutions and conferences, publishing of articles, and production of templates which facilitate adoption of the project. The project also facilitated participation by others, enabling them to see first hand the potential benefits of engaging with it. The outcome of these activities has been a wider adoption or scaling up of the project than is usual. This appears to have been the result of academics' perception of the value to students of their participation in such a learning activity, the ease of adaption of the project to different contexts, and the enthusiasm of adopters for promoting high quality learning experiences.

**Keywords:** dissemination, innovation, higher education, role-play, simulation

## **A blended approach to collaborative learning: Can it make large group teaching more student-centred?**

**Belinda Allen**

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School of Materials Science and Engineering  
University of New South Wales

**Iain McAlpine**

Educational Development and Technology Centre  
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**Mark Hoffman, Paul Munroe**

School of Materials Science and Engineering  
University of New South Wales

Current educational thinking promotes a student-centred approach to teaching as more engaging and challenging for students, leading to improved learning outcomes. But what is 'student-centred' learning, and how can it be achieved in a higher education setting with very large classes and content-rich courses? In a materials engineering course for 300 first-year engineers, an online group project was introduced to add authenticity and collaborative activity into the course, and to improve student engagement. We explore the design, development and implementation of the project, and see if the intended outcomes were achieved.

**Keywords:** student-centred, collaborative learning, problem-based learning, group work, large group teaching, online

## **Spatial imaginings: Learning and identity in online environments**

**Reem Al-Mahmood**

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The University of Melbourne

"I have been thinking about space for a long time" are Doreen Massey's (2005, p.3) words that have captured my imagination to explore online learning spaces and places as experienced and used by learners. This paper opens up a space to explore the intersections of spatiality, identity and online learning, drawing on concepts from geography and actor-network-theory (ANT) originating in science and technology studies, using a relational socio-material perspective. I argue for 'spatial imaginings' that are more generative if space/place is conceptualised relationally. Through three vignette snapshots as part of a larger ethnographic study within an Australian university, I explore issues of learner identities and their learning practices in relation to pedagogical, physical and online spaces/places. These socio-material explorations can enrich our understanding to challenge existing views of space, time and place as bounded, fixed and stable. The emergent

conceptual insights can inform the work of educational designers, online educators and educational theorists to better understand online learners and their diversity and the socio-material complexities and hybridities of pedagogical, physical and online learning spaces/places.

**Keywords:** spatiality, learning spaces, online learning spaces, metaphors, qualitative methods, Actor-Network-Theory, ANT, hybridity, space/place, flows, identity, learning

## **E-learning: Do our students want it and do we care?**

**Leonie Arthur, Bronwyn Beecher, Roslyn Elliott, Linda Newman**

School of Education  
University of Western Sydney

Early childhood courses at the University of Western Sydney are at a watershed. Program restructuring has embraced the challenges of the changing contexts of Australian early childhood education and the dynamic multicultural, multilingual, multi-aged communities of Western Sydney. These conditions have resulted in the reconceptualisation of the content and delivery of initial and continuing education for early childhood professionals at UWS. This paper will present research conducted by the early childhood staff team as they document and analyse the introduction of new courses using a blended learning approach.

**Keywords:** technologies for marginalised and disadvantaged

## **Audience response systems in practice: Improving Hong Kong students' understanding of decision support systems**

**David A. Banks**

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**Ann Monday**

School of Management  
University of South Australia

There will almost always be a number of students who are reluctant to actively contribute in face-to-face learning situations because they are shy or are culturally concerned about potential loss of face. Audience Response Systems (ARS) are part of a technology that, principally through its feature of anonymity, offers the opportunity for all students to safely contribute in face-to-face learning situations via individual keypads. Greater feedback from a group of learners poses benefits for both learner and teacher. For the teacher it can help identify areas where student understanding may be weak or incorrect and thus allow appropriate feedback to be applied. For the learner it allows them to see how fellow students are coping and to gauge their own relative performance. This paper reports on the use of an ARS with a group of students in Hong Kong studying a second year undergraduate decision support course. The ARS was used to provide process support for a

revision session that explored decision support systems (DSS) and decision making and also to gather some details about the students as a population of learners.

**Keywords:** electronic meeting systems (EMS), audience response systems (ARS), decision support systems (DSS), Hong Kong, culture, teaching and learning strategies

## **Collaboration for inter-cultural e-learning: A Sino-UK case study**

**Sheena Banks**

School of Education  
University of Sheffield

This paper presents work in progress in a Sino-UK project to develop inter-cultural e-learning through a collaborative team process that is itself inter-cultural. The Universities of Lancaster and Sheffield are working with Beijing Normal University, Beijing Jiaotong University, South China Normal University and Zhejiang Normal University to develop joint understandings of e-learning through the design, production and implementation of an online course. This will be a short, fully virtual course run on Moodle starting in October 2006 that will offer Higher Education teachers in the UK and China a professional development opportunity to understand more about inter-cultural e-learning. In the project the Sino-UK team are working collaboratively in ways that enable pedagogies and practices about e-learning from both China and the UK to be incorporated into the learning design of the online course. This has required us to share pedagogic beliefs, experiences of e-learning and e-tutoring in order to achieve effective decision-making around design and joint course production that draws on the collective expertise and experience of both the UK and Chinese teams. We have found that inter-cultural collaboration requires an understanding of policy, institutional, subject and role cultures as well as pedagogic beliefs. Inter-cultural collaboration has the potential to lead to new e-learning practice, but we are also experiencing considerable impact on our existing practice and challenges to our 'taken-for granted' assumptions about e-learning, professional development enhancement and institutional and national impact.

**Keywords:** e-learning, learning design, pedagogic beliefs, e-tutor training, inter-cultural collaboration, professional development

## **Collaborative learning: Some possibilities and limitations for students and teachers**

**Matt Bower, Debbie Richards**

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Macquarie University

Collaborative learning has become recognised as a means of encouraging deep learning and a key technique in problem and experienced based learning. For Computing students collaboration is not only a learning strategy but a learning outcome. While this is not a new idea, there appears to be reluctance on the part of teachers and students to create and take those opportunities. This paper seeks to

revisit the possibilities that exist for collaboration ranging from team based work to peer review in the hope of motivating a change in culture and practice. We include discussion of these strategies together with highlights from student surveys regarding student dispositions towards collaborative learning. We note that the perceived overheads and logistical difficulties, to students and teachers, will often discourage the use of collaborative tasks, but that the educational outcomes achievable through collaborative learning exceed those possible when students work in isolation. Particular attention is given to technological approaches for facilitating collaborative learning. While the discussions that follow relate to computer science education specifically, it is intended that many of the approaches and associated issues will apply to other learning domains.

**Keywords:** collaborative learning, groupwork, team-based learning, computing, computer supported collaborate learning

## **An Agile method for developing learning objects**

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There is considerable international interest in learning objects. The emphasis on technical issues such as standardisation of metadata schemes and software packaging has diverted attention from the central issues of how to develop pedagogically effective learning objects. This paper presents the development methodology of the UK Centre for Excellence in Teaching and Learning (CETL) for Reusable Learning Objects. This is an 'Agile' approach that balances the requirement for flexibility to fit a pressurised work environment with the need to facilitate the development of high quality resources. The approach is grounded in front line practice, including the development of EASA award winning learning objects. The paper outlines this method from problem identification, through design, to learning object production. It complements the earlier work on design principles and heuristics to provide a comprehensive and flexible framework for learning object development.

**Keywords:** reusable learning objects, methodology, agile methods

## **Recorded lectures: Looking to the future**

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Monash University's Faculty of Law has been providing undergraduate students with audio tapes of lectures for many years. Traditionally students would borrow the audio tape and listen to it within the Library. In 1999 the University Library began investing in digital recording technology enabling selected lectures to be made available to students via streaming servers. By Semester 1 2006, 64 undergraduate law classes were being taped, with some classes registering over 7000 hits for the semester. Student expectations of and reliance on these online lectures has steadily grown, with teachers facing increasing pressure to tape their lectures. This pressure is now expanding to demands for more flexible methods of access to the lectures.

This paper looks at the development of recorded lectures at Monash University, with a particular emphasis on the experience of the Faculty of Law. Teacher concerns regarding the provision of recorded lectures and the potential implications for other teachers and units in the faculty of a Semester 2 trial of podcast lectures is discussed.

**Keywords:** online learning, learning on demand, recorded lectures, podcasting

## **Teaching with technology: Using online chat to promote effective in-class discussions**

**Leanne Cameron**

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Macquarie University

Much has been written about the role discussions can play in creating an effective learning environment. However, the difficulties in conducting an in-class discussion in which all students have the opportunity to take part in a meaningful way are well recognised. It may be difficult for a student to feel his/her contribution is integral to the discussion if they are one of 20; shy students are rarely heard from, and controversial content may not attract adequate student contributions. Is it possible for the tutor moderating the discussion to determine those students who are finding the concepts under discussion difficult to understand? Does the opinion of the tutor influence the nature of students' responses? In-class discussions have been used in tutorials in School of Education courses at Macquarie University to study the set course readings but the course tutors were not convinced of their effectiveness. As firm believers in the value of discussion, the tutors had to find another way to enable everyone to have a voice. This paper reports on the in-class online chat assessment task currently being offered. These discussions successfully encouraged all students to become involved and the students' understanding and engagement with course material improved dramatically.

**Keywords:** computer-mediated communication, learning communities, collaborative learning, teaching and learning strategies, technologies for marginalised and disadvantaged

## **Everyone's learning with podcasting: A Charles Sturt University experience**

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Charles Sturt University

**Catherine McLoughlin**

School of Education (ACT)  
Australian Catholic University

The authors have been involved in a year long project in which a group of second year undergraduate students is placed in charge of producing a series of educational podcasts targeted towards other students undertaking a number of information technology subjects. The exercise has proved to be a valuable learning experience for all those involved: the listeners, the producers and the educators. This paper describes the authors' ongoing efforts and discusses the impact of the activities on each of the groups involved. It concludes with suggestions for other educators interested undertaking similar efforts, which may contribute to best practice as the field of educational podcasting continues to develop and evolve.

**Keywords:** educational podcasting, MP3, mobile learning, peer teaching, learning by teaching

## **A participatory design approach to the development of online tutor training materials: A case study from China**

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The role of the tutor in online learning can be complex due to the wide range of media and pedagogies that can potentially be used. As a result there is a need for effective training materials that recognise this and the Sino-UK eEducator project aims to meet this need. This paper reports research into the participatory design approach adopted within the project. Ten potential users of the final eEducator training module are involved in the design process. Reflective journals and interviews have been used to collect data regarding the ways they work with other academics and learning technologists. The paper describes the process, the similarities participants share and problems they confront in this project.

**Keywords:** participatory design approach, collaboration, eEducator training

## **Driving online education: The Swedish Net University – A case study in purpose and pedagogy**

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This paper maps the development of the Swedish Net University and raises theoretical and practical questions about its purpose and its effect on pedagogically sound e-learning. The paper analyses what happens when e-learning is driven from the top and universities are rewarded with money for putting their courses online. It also studies the effects of online availability of university courses for marginalised groups in society. It is clear from research undertaken for this paper that mature age, remote area, immigrant and female students have more opportunity to study because of the establishment of the Net University in Sweden. The extent to which social engineering was a factor in the government's decision to create the Net University is discussed in relation to this broadening of recruitment. The fact that the Net University is a virtual organisation which acts as a broker for courses is also studied. Some courses are specially designed to be offered online while others are traditional courses that are simply downloaded to the net. Contrasting the two enables the author to argue for a pedagogy of e-learning.

**Keywords:** educational paradigms, computer mediated communication, ICT policies and strategies

## **Real use research evaluation of an online essay writing module: Information literacy e-learning modules project**

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**Jenny McDonald**

University of Otago

This paper reports on a work in progress. Evaluative research findings for one module from the New Zealand Tertiary Education Commission (TEC) funded project, *Information Literacy e-Learning Modules* are presented. *Essay Writing with Readings* is the first authentic task-based online information literacy module to be piloted and trialed with students and staff. Evaluation of the usability and effectiveness of the module was conducted in 2006 in real use contexts as part of a class, and as a stand-alone resource. The aim of the project was to develop a range of on-line modules (11) over two years, predicated on the Australian and New Zealand Institute for Information Literacy (ANZIIL) standards of information literacy (Bundy, 2004), which are derived from standards developed by the American Library Association (2006). The modules are amenable to adaptation and use in a range of contexts, as well as accessible to diverse groups of learners. Broad findings from the evaluation of *Essay Writings with Readings* showed the module, in essence, as meeting the project aim. Participants strongly endorsed the module,

which had relevance for users with a diverse range of backgrounds and experiences. The researchers also concluded that the module has potential for adaptation, development and customisation as a teaching tool. The research methodology which generated these findings was both quantitative and qualitative. The evaluation involved 23 participants, both staff and students, from university, polytechnic and college of education backgrounds. Refinements for the evaluation of additional modules are noted as the project proceeds into its second year.

**Keywords:** information literacy, online, essay writing, research evaluation

## **Learning with wireless mobile devices and social software**

**Thomas Cochrane**

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Unitec

The paper outlines the beginning of research into the synthesis of mobile personal technologies, social technologies, and constructivist pedagogies, and briefly explores the potential for creating student-centred collaborative learning communities using wireless mobile devices (e.g. PDAs, Ultra Mobile PCs, mobile phones and smart-phones) and social software (e.g. blogs, RSS, instant messaging, moodle, elgg etc...). Instead of simply re-purposing content to fit small screen wireless devices, a wide range of social software tools can be used to facilitate social constructivist pedagogies informed by constructivism, social constructivism, communities of practice, and a conversational model of learning. Many social software services provide mobile versions of their services, and there are a growing number of dedicated services for mobile devices, as well as Java, Symbian, Palm OS, and Windows mobile client applications. Several example scenarios are outlined.

**Keywords:** social software, wireless, mobile, cell phones, PDAs

## **Argumentation and text-based conferencing: Who is learning and what is being learned?**

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This paper focuses on the use of computer mediated communication (cmc), specifically text-based asynchronous conferencing. It reports on two small scale studies which investigated its use as a medium for developing students' argumentation skills. The first study focused on a postgraduate distance program in Applied Linguistics whilst the second study focused on an undergraduate distance program in Health and Social Welfare. Both programs were delivered by the Open University, UK and students represented a diverse population with regard to age, ethnicity, educational achievement and geographical location.

The paper discusses the use of a linguistic framework to investigate how teachers and diverse communities of students are using cmc to develop new ways of

exchanging views on academic ideas and issues. Argumentation was focused on because a fundamental aim of education is to develop in students a critical attitude towards knowledge, and the ability to engage in reasoned debate (Terenzini, Spinger, Pascarella, & Nora, 1995). Claims have been made that asynchronous conferencing is particularly effective in enabling students to reflect on, elaborate and challenge ideas put forward. The suggested framework allows researchers to systematically examine such claims and to gain insight into individual and collective processes of argumentation and learning.

**Keywords:** computer mediated communication, asynchronous text-based conferencing, distance education, linguistic framework, argumentation

## **An in-depth case study of students' experiences of e-learning – how is learning changing?**

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**Maarten de Laat**

Exeter University

**Teresa Dillon**

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**Jonathan Darby**

The Open University

This paper describes some of the findings which have emerged from an in-depth case study exploring students' experiences of e-learning. The main research theme of the project was to collect learner stories on their experiences with e-learning. Data was collected through an online survey, coupled with a series of in-depth case studies using student audio diaries and interviews. The study yielded both expected and unexpected findings in terms of students' use of technologies. The expected findings are useful in terms of providing valuable up-to-date empirical evidence of students' current learning environment. The unexpected findings give a hint of the student learning environment of tomorrow and have important implications for policy and practice.

**Keywords:** student experiences, student perceptions, e-learning, in-depth case studies, audio log, online survey

## **Analysing online discussions: What are students learning?**

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Online asynchronous discussions (OADs) are increasingly advocated to encourage interaction in blended learning in higher education. However, questions remain over the educational utility of OADs. In particular, relatively little is known about how students use online discussions and the ways and extent to which their use enhances learning. Previous research seeking to investigate the correlation between discussion board use and exam results has proved problematic and open to misinterpretation. Analysis of the content of online discussions may provide a more fruitful way of discovering the impact on student learning, but this approach can appear overly complex and time-consuming. This paper describes a small scale research project which pilots a number of different methods for analysing online discussions and considers the advantages and disadvantages with each approach, both in terms of methodological simplicity and utility of findings.

**Keywords:** web-based education, online discussion, blended learning, student learning, social presence

## **An experience with conducting a role-play in decision making for a food and nutrition policy course**

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In 2005 post-graduate students participated in an online role-play in a distance Masters in Public Health course, Food and Nutrition Policy Studies, at the University of New South Wales. A major course outcome is for students to appreciate the political dimensions of policy formulation and to understand that it is not just a matter of researching and analysing relatively objective food and nutrition data. The strategy we chose to achieve this was a two-week online role-play, using a WebCT discussion group, in which students were assigned roles as members of an inter-sectoral national Food Policy Planning Committee. This was embedded in a realistic case study, which forms the backbone of the 14-week course. The online environment offered these distance students a real opportunity to learn about the complexity of policy negotiation. We reflect on the factors that appear to have contributed towards the success of this strategy.

**Keywords:** online, role-play, WebCT, policy

## **Who's learning and how? Researching the learner experience**

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The Open Learning Partnership

This paper provides an overview of the recently completed Learner Experience of E-learning (LEX) research study which was funded by the Joint Information Systems Committee (JISC) in the UK. By interviewing learners from a range of post-16 educational contexts from across the country, the study aimed to elicit their views, not only on technology enhanced learning, but also on how they use technology in their everyday lives, and the impact this may have on their attitudes and approaches to learning. The paper will explain the rationale behind the research, describe the development of an innovative research methodology and outline the main findings as illustrated in the final project report. The findings indicate that there are several under-researched aspects of e-learning which would merit further investigation including the ubiquitous use of social software, learner control issues and the emotional impact of technology use. The paper concludes that tutors, course designers and managers would benefit greatly from taking time to listen to their learners.

**Keywords:** learner experience, learner voices, research approaches, technology in life and learning

## **Using fMRI to explore interactivity and cognition: A methodological case study**

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Recent educational models of computer-based interactivity stress the important role of a learner's cognition. It has been suggested that interactive learning tasks carried out in the context of an authentic, problem-based scenario will result in deeper, elaborative cognitive processing leading to greater conceptual understanding of the material presented. Research methods that have been used to investigate cognition and learning have traditionally included self-report questionnaires, focus groups, interviews and think-aloud protocols and, more recently in computer-based settings, interaction log file or 'audit trail' analysis. While all of these techniques help researchers understand students' learning processes, all are limited in that they

rely either on self-report or behavioural information to speculate about the cognitive activity of users. The use of functional brain imaging techniques has the potential to address this limitation. Drawing on issues encountered during a current study using Functional Magnetic Resonance Imaging (fMRI), this paper discusses the key methodological issues involved in the use of these techniques for exploring interactivity and cognition.

**Keywords:** interactivity, cognition, multimedia, functional brain imaging, fmri, learning

## **Whose assessment in a problem based learning medical program?**

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This paper describes work in progress of an electronic assessment project at the University of Sydney. The Faculty of Medicine has developed an online format for the Modified Essay Question (MEQ) written assessments used in its problem based learning (PBL) medical program. The MEQ is used to assess a student's approach to a problem, particularly their reasoning skills and understanding of concepts. The goals of this project include assisting students perform optimally in the MEQ assessment, implementing improvements to the efficiency of written assessment administration and enhancing the quality of feedback to students. Four trials of the online MEQ have now been conducted. Faculty and student feedback on all four trials have been very positive. Students have reported that they have more time to plan and draft their answers and that the electronic format is more motivating than using the traditional paper assessment format. Faculty staff have reported that the online MEQ reduces the burden of marking student answers, while also improving the provision of student feedback. This project is attempting to meet the assessment challenges faced by a medical school with large student enrolment numbers by efficiently assessing the application of knowledge and clinical reasoning in a PBL context.

**Keywords:** online, assessment, medical education, problem based learning

## **Re-purposing an online role play activity: Exploring the institutional and pedagogical challenges**

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Migrating a proven learning design from one online teaching milieu to another is not always a simple process. Complications can arise on various fronts. From a pedagogical perspective, for instance, one of the main challenges is associated with the task of realigning the activity to adequately reflect the new curriculum context, delivery mode, target audience, learning process and anticipated outcomes. Similarly, institutional barriers such as intellectual property and the available

online infrastructure and technical supports can also limit, and at times inhibit, reuse. Drawing on personal experience, this short paper discusses the challenges associated with re-purposing an online learning design across program, disciplinary and institutional contexts. Using a role play activity as the case study, this paper aims to stimulate discussion about the complexities and practicalities associated with the reuse of a proven learning design. Initially the original and re-purposed learning designs are outlined. Then, the pedagogical and institutional shifts that were required are discussed and a framework for analysing the dimensions of reuse is proposed.

**Keywords:** learning design, reusability, role play, pedagogical and institutional challenges

## **Learner identities in transition: Getting to know our students better through a comparative investigation of two British and Australian postgraduate programs**

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**Siân Bayne**

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This paper describes research in progress, which aims to explore the ways in which learners in higher education negotiate issues of identity performance when making the transition between face-to-face learning and learning online. The research compares the talk of two groups of British and Australian learners engaged on courses in which an initial period of classroom-based learning is followed by collaborative, internet-based study.

Drawing on methodological tools provided by discourse analysis, the project is working with discussion-board transcripts generated in the context of online learning to formulate a methodology appropriate for analysing the 'frozen talk' of the online discussion. Insights from this analysis will be used to draw conclusions on how identities are 'written' within online courses, how this differs from identity construction in conventional learning contexts, and how differing institutional, cultural and pedagogical factors affect modes of identity construction among learners in such 'blended' learning environments.

**Keywords:** blended learning, identity, discourse analysis, online communication

## **Taking ownership of technology: Lecturers as LMS learners**

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Our paper presents the findings from a study of personalised support in the use of the Learning Management System (LMS) to lecturers at the Faculty of Medical and Health Sciences, University of Auckland. Our study indicates that personalised support is an effective means of supporting some lecturers as they learn about the use of technology for teaching. We conclude our paper by considering the value of this research for the Faculty.

**Keywords:** technology, learning management system, training, pedagogy

## **Using educational technologies to understand how learners solve problems**

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In this paper we examine how a highly interactive educational technology program Child Growth & Development in the first 12 months of life was used to investigate the problem solving behaviour of learners. This preliminary study was also used to evaluate the study instruments ahead of a more substantial investigation. The design of the program was informed by Problem Based Learning (PBL) philosophy with authentic problems as the stimulus for problem solving activities. We describe how an electronic record of learners' movements and activities was captured by an embedded audit trail system, as learners progressed through the steps of a problem solving procedure. This method revealed highly individual problem solving behaviours for learners. Similarities and differences were shared between learners at different stages of the process. External measures, including learner perceptions of problem solving ability, were used to supplement the audit trail data. This enabled a more detailed picture to emerge of the factors that may influence problem solving skills, including confidence, approach-avoidance style and self-control.

**Keywords:** problem solving, problem based learning (PBL), educational technologies, audit trails

## **Personality type and learning environments: Two case studies**

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Research by the author has been conducted previously that explores the similarities and differences in online and face-to-face environments, and the exploration of personality type and the learner's experience of the online learning environment. This paper presents two case studies of learners who were categorised using the Myers Briggs Type Inventory<sup>®</sup> according to their connection with the outer world (the Extraversion / Introversion dichotomy and the Judging / Perceiving dichotomy), describing their physical learning environments and the different needs that each environment presents and meets. It then explores possible ways that the online environment might complement the physical learning environment and meet the same needs, discussing the implications for the online environment.

**Keywords:** personality type, learning environments

## **Perspectives of stakeholders on e-learning in science education at university**

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This paper reports on three closely related studies designed to investigate the perceptions and expectations of e-learning held by stakeholders in the education of science students at University. The participants in the studies are undergraduate science students, parents of the science students and teachers of the students. A combination of qualitative and quantitative data gathering activities are used. Results show congruence amongst the stakeholders of a core role for e-learning in a predominately campus-based experience of learning science. This outcome has important implications for the perceived identity of the Faculty of Science and how it plans for its medium-term learning and teaching strategy.

**Keywords:** e-learning, stakeholder perspectives, science, higher education

## **Fostering communities of practice during the creation of an online classroom-based simulation**

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Working with and managing a team can be a challenge in any project development. This paper reports on how a team of researchers, an instructional designer, programmers and graphic artists worked within a community of practice, as simulation software was created and further developed. The simulated classroom represented in this software was designed to enhance the initial practicum experience of pre-service teachers. The teaching of literacy skills in primary schools framed the pedagogical focus of the software – one of the priority areas within primary schooling. We report on how research associated with each iteration of the simulation prototype software helped team members to develop understandings of each other's role in the project. Initially the instructional designer, content experts and researchers led the development process, and other members were more like legitimate peripheral participants. Over time, all members of the team developed into legitimate participants, and formed a viable community of practice as ways to support initial teacher education were examined. We describe the processes we use to help all members of the design team enter the communities of practice through the opportunity to understand the context and purpose of the project.

**Keywords:** simulation, pre-service teacher education, communities of practice

## **Sustaining and transferring curriculum and pedagogical innovation through establishing communities of practice**

**Robert Fox, Lee Yeung, Nancy Law, Allan Yuen, Alison Yeung**

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The lack of a sharing and collaborative culture within schools was identified as a key barrier to the successful implementation and scaling up of innovative practices using technology in education in Hong Kong, according to a government report (EMB, 2004). The report identified a need to develop more supportive structures and mechanisms to foster a shared culture and to establish communities of practices between teachers to encourage the sharing and the exchange of classroom experiences as well as to collaborate in curriculum and pedagogical innovation in and across schools. This paper outlines how a supportive structure was built by establishing the environments and infrastructure, focusing on building communities and partnerships. The paper presents the framework which guides the establishment of the communities and identifies mechanisms to foster a sharing and collaborative culture.

**Keywords:** building communities, sharing practices, teacher education

## **Iterative learning: Self and peer assessment of group work**

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Group work is commonly used to help students learn and develop team skills. However, many students report having poor experiences of assessable group work. While self and peer assessment can be used to reward student contributions more equitably in assessment contexts, careful design and support issues need addressing to ensure its success. This paper reports a social constructivist approach to assessing and improving group work. First, the literature linking summative and formative assessment with group work is reviewed. The importance of formative assessment in developing shared understandings between academics and students of the assessment criteria, in particular through self and peer ratings on criteria related to their group work contributions, is discussed. Second, findings from a pilot study, employing an online tool (SPARK) to enable collection and aggregation of self and peer ratings, are presented. Two cycles of data analysis, interpretation and reflections generate what we term iterative learning. Third, when carefully integrated, SPARK facilitates not only individual and groups of students to learn but also affords opportunities for academics to learn and refine assessment that increases student engagement. This paper will be useful for academics and academic developers seeking to support improved group work learning and assessment activities.

**Keywords:** formative assessment, group work, team work, self and peer assessment, SPARK, free riding, team skills, feedback

## **Sharing open courseware content through learning objects standards**

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A number of universities around the globe have decided to share their learning materials, making them available for use and modification by learners and other institutions. This initiative, started by the Massachusetts Institute of Technology (MIT), has opened up great opportunities for new ways of reusing content and for collaboration amongst teachers. It has also created new challenges, including the fact that there are thousands of courses available which cannot be easily modified by authoring tools or integrated into the courses managed by Learning Management Systems, due to the fact they are not in a standards compliant format. Regrettably, making them standards compliant is time-consuming and expensive, requiring a lot of effort from academics and institutions. This paper reports on a project to automatically structure learning materials and package them so they can be reused. We present a tool that produces IMS-CP compliant courses, with embedded metadata, in an automatic way by combining custom-built information extraction techniques and open e-learning standards. Extensive testing was carried out on different learning object repositories.

**Keywords:** open courseware, e-learning, standards, metadata, content packaging, learning management systems, learning objects repositories

## **To post or not to post: Undergraduate student perceptions about participating in online discussions**

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Computer mediated conferencing (CMC) is now a common feature of blended learning environments where students learn in both face to face and online settings. While many teachers recognize the value of online discussions for learning, students appear to have different perspectives. Consequently, their participation in online discussions is often sporadic and not genuinely interactive. This paper examines these issues and provides student perspectives about participation in online discussions which arose from a case study in a conceptually difficult subject. Systems data indicated low numbers of posted messages. Student interviews provide some insights into this lack of participation, and identify the influence of the curriculum design, especially the nature of the learning activity, and its connection to other aspects of the course, for example, assessment and the regular class sessions. Other influential factors include the student's ideas about learning, managing demands on their time and their acceptance of CMC. The paper also provides recommendations for improving participation in online discussions.

**Keywords:** CMC, blended learning, online discussions, participation

## **Prototyping a wholly online IT unit**

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One of the objectives of prototyping is to assess the reactions of users to a proposed system. Reactions are gathered through feedback which then influences the way a final system is designed. This paper reports on a face-to-face undergraduate unit that was converted to online mode (the prototype) in an attempt to provide feedback about an innovative problem-based learning approach for a new unit. The feedback from students through three online surveys was positive overall. The student feedback and the lessons learned by teaching staff through interaction with the prototype suggested how the design and development of the new unit should proceed.

**Keywords:** prototyping, IT curriculum, online learning, problem based learning

## **Who's learning? Responding to the needs of a culturally diverse world of online learners**

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A literature review shows that online learning may be impeded for some learners of different cultural backgrounds. Therefore, guidelines are needed to help design courses that are culturally conducive for learners. This paper proposes that Vygotsky's sociohistorical theories provide a basis for designing these guidelines because they suggest that the sociohistorical background of a community can explain the learning processes of the community. A design research approach was used in this study to evaluate and modify the guidelines designed for an online course for learners from an Arabic community, exemplifying the use of this approach. Preliminary findings support the use of these theories for the design of guidelines for pedagogically sound, culturally favourable online learning environments.

**Keywords:** culture, online learning, sociocultural, design guidelines

## **Professional development for online teaching practices**

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This study found that early adopters perceive professional development activities, which promote the sharing of experiences and examples of practice, as the most useful ways of developing knowledge about online teaching practices. Early adopters see the development of practical skills, in particular technical and pedagogical, as key in developing online teaching practices.

The professional development activities that early adopters identified as the most useful in developing these practical skills were discussion between peers, face-to-face workshops, one-on-one consultation and mentoring. In contrast, the findings suggest that early adopters found it less useful to attend conferences, read journal articles or books, gain online qualifications or visit websites to learn about online teaching practices.

This paper recommends that more research be undertaken to determine how the less useful professional development activities identified in this study, in particular conferences and websites, could better meet lecturers' needs.

**Keywords:** early adopters, professional development, online teaching practice

## **E-learning adoption: Staff development and self-efficacy**

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The influence of staff development on the adoption of e-learning in the tertiary sector has been identified by a number of researchers. While different models of staff development are used in New Zealand organisations, it was unclear prior to this research which models helped staff develop capability and confidence in using new technologies for teaching. This article reports the findings of a project aimed at investigating the range of e-learning staff development models and their effectiveness in New Zealand tertiary education. The foci for the research were: the range of staff development models offered by a sample of New Zealand tertiary providers; how staff development models prepared academic staff for e-learning and the relationship to self-efficacy and why some models were more effective than others. A range of methodologies were used – focus groups, one-to-one interviews, questionnaires and case studies. Most participants had undertaken formal staff development of some kind, and all used a wide range of strategies for informal learning. The researchers concluded that existing formal staff development models were not regarded as adequate to assist staff to fully develop their capability and potential for e-learning, and many staff were engaging in a range of informal staff development activities.

**Keywords:** staff development, e-learning, self-efficacy, capability, competency

## **Using the internet for professional development: The experience of rural and remote professionals**

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The retention of professionals employed in rural and remote areas of Australia is a critical factor in community growth and sustainability. Retaining professionals depends to a large extent on the availability of support and professional development that is becoming increasingly accessible through the internet. This paper describes a research study that used survey and interview methods to indicate

how a range of ten professional groups employed in rural and remote Australia, are accessing the internet for professional development. The findings indicate that email, the world wide web, discussion, chat and listservs were commonly used, however, the ability of professionals to avail themselves of professional development support on the internet was not always within their own control, and depended on a number of complex factors.

**Keywords:** internet, professional development, rural and remote professionals

## **Innovation through action learning**

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This paper describes an organisational approach that is being undertaken by a vocational educational institution to engage teachers in the use of emerging technologies to enable them to implement innovative ways of teaching and learning that are more flexible and accessible for learners. The approach incorporates large scale innovative professional development opportunities for vocational teachers involving action learning project teams exploring the potential benefits of emerging technologies and trialling the use of these technologies with learners. The outcomes will impact on organisation wide decisions about the future direction of collaborative learning environments and technologies to support teaching and learning. These projects are part of a state-wide TAFE NSW dynamic research teaching and learning community, continuously collecting practitioners' ideas, experiences and information then sharing, organising and evaluating them. Using action research methodology the projects focus on what the teachers' experience, the outcomes for learners and the technical challenges embraced. This approach aims to collect meaningful applications of learning strategies using technologies that are effective, sustainable and scaleable.

**Keywords:** emerging technologies, teaching and learning strategies, teachers' learning, learning communities, collaborative learning, social software, Web 2.0, action learning, action research

## **New students, new learning, new environments in higher education: Literacies in the digital age**

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Information literacy is developing new meanings and importance in the online age of teaching and learning in higher education. Information literacy, as a highly prized graduate attribute, is related to the development of lifelong learning capacities. Its strong re-emergence in the form of digital literacy in the context of major online developments at Deakin University is considered through four cases. In each case the reader is asked to consider how the teaching staff members have conceived critical discipline-based information and digital literacies, how these

conceptions are related to desired learning outcomes, the types of digital and online environments designed to support the development of these literacies, and how each one contributes to the development of lifelong learning capacities. Information and digital literacy is enlivened through being situated in broader understandings of new generations of learners, new forms of learning and new e-supported learning environments. Educational design, evaluation, research and technology implications of these new types of digital and online-based teaching and learning environments are finally examined.

**Keywords:** information literacy, digital literacy, teaching and learning environments, wholly online units, education design

## **Designing for disruption: Remodelling a blended course in technology in (language) teacher education**

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This study employs a case study model to documenting the evolution over three semesters of a Masters course in technology and language learning for in-service teachers using a social constructivist pedagogical approach (Felix, 2002) within an ecological framework, from completely face-to-face (f2f) to predominantly online. The focus is on teachers' acceptance of change in the form of integration of technology into firstly their learning and secondly their teaching, as well as their adaptability to self-managing their learning. The design of the modified course took an experiential modelling approach in which all of the tools and processes that were taught in the course were modelled and experienced by students (teachers) during the semester. These tools include reflective and social computing tools such as chat, blogs, wikis and e-portfolios, as well as lesson and task templating software such as Swarthmore Makers®, Hot Potatoes®, and WebQuests®, and webpage creation software such as Dreamweaver®. Based on grounded research methods, techniques such as surveys, problem-based focus groups and short answer responses were used to ascertain the values of the changes. The information collected from these instruments is presented and compared to the reflective pieces produced by students in their blogs, and the projects they created.

**Keywords:** teacher education, social technologies, social constructivism, ecological pedagogy, chaos/complexity theory, disruptive technologies, learner-shaped course design

## **Learning, study and review methods 101: A fun way to learn and study complex theoretical content**

**Cheryl Howard**

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Monash University

This paper examines the development and implementation of a collaborative/game-based study format in a university context and the benefits gained by the students involved. The research project compared the established delivery format of lectures and tutorials with an alternative delivery format involving collaborative learning and games-based study tools. It examined the differences that these formats had on student learning outcomes for the heavily theoretical content of the Human-Computer Interaction in Multimedia (HCI) unit, as part of the Multimedia Bachelor Degree at Monash University.

A collaborative/game-based study format was developed to provide an interactive learning environment that allowed the students to explore the unit content using a variety of tools and resources, such as textbooks, internet, and discussion groups. To verify understanding, students contributed questions, based on the content researched, to the game-based study tools designed to enhance the study and review process. The treatment compared the results of students in each group (traditional vs collaborative) to their performance scores in a pre-test and post-test of the content area (short-term retention) and the results of the semester examination (long-term retention). Data gathered by survey was used to ascertain student opinions regarding both methods.

**Keywords:** games-based study tools, collaborative learning, teaching and learning strategies

## **Reflective practice in lesson design**

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This paper recounts our reflections on the design and delivery of a unit of study at masters level. Information Technology and Teaching-Learning Process was delivered in a blended approach with the combination of face-to-face meetings and online sessions. The paper describes how the instructors engaged in “reflection on action” advocated by Schön and their efforts in bridging the gap between the standpoints of the students and that of the instructors by elaborating the rationales behind the design, providing technical support, modelling, creating opportunities for reflection and constantly making adjustments to meet the students’ needs. Through continuous reflections, the instructors gained deeper understanding of the curriculum.

**Keywords:** reflective practice, teacher education, constructivist learning, teacher learning

## **Online facilitation: Strategies for gaining engagement in different OLEs**

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The strategies that some teachers use in online learning environments engage students, facilitate participation and, more importantly, promote interaction with content, teacher and peers. Following a detailed analysis of the contributions to a sample of online groups, and interviews with the teachers, we report on the strategies that led to the highest contribution rates. This paper focuses on two cases that achieved high contribution rates using two different software packages. We provide an analysis of the tasks set by teachers, class activity, the frequency of postings, the value of the software features and the overall structuring of online processes. While we could not identify clear impacts of the different interfaces on the contribution rates achieved, we do canvass some possibilities in this area.

**Keywords:** online, pedagogy, learning, environment, interaction, analysis

## **Analysing the efficacy of blended learning using Technology Enhanced Learning (TEL) and m-learning delivery technologies**

**Kevin Johnson, Cathal McHugo, Timothy Hall**

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University of Limerick

The developing ubiquitous nature of information communication technology (ICT) offers opportunities and benefits in the educational field when blended with more traditional approaches to learning and teaching, they include: monitoring of on-line activity, rich administrative support, repository of learning materials, multiplicity of assessment options and strong collaborative tools. Additionally, it is common for third level students to have excellent internet access on campus, in university residences, and at home. This technological strength coupled with the high level of ICT literacy of today's student makes blended learning an attractive option. In order to obtain maximum benefit from such a blended approach students must log-on to the learning environment regularly to see new information and maintain their collaboration, a discipline they do not easily adopt. Two ways of encouraging such engagement, the first of which is tested in this paper, are technology enhanced learning notification methods and m-learning announcement means. The TEL notification method is discussed and tested through a student survey (COLLES) to determine the students' perception and preference.

**Keywords:** learning environment, blended learning, m-learning, technology enhanced learning, COLLES, learning management system

## **Towards a reference model for the personal learning environment**

**Mark Johnson, Paul Hollins, Scott Wilson, Oleg Liber**

CETIS

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The concept of 'Personal Learning Environment' (PLE) is fast emerging as a significant branch of learning technology. This paper describes the approach to this topic adopted by the Centre for Educational Technology and Interoperability Standards (CETIS) PLE project in the definition of a PLE Reference Model and in building a PLE prototype. In a domain that is typified by emerging technology, discursive differences and a lack of common terms of reference, we explain our approach in identifying three perspectives on the PLE for analysis: themes, patterns and categories. These three strands are viewed as different 'strata' to approach the topic, the interplay between which has led to a perspective on the PLE which has combined an analysis of current PLE-focused discourse (themes), an examination of current practice (patterns) and an attempt to define phenomenological categories of the 'PLE experience' from the philosophy of technology and cybernetics. We introduce our model as the focal point for these different investigations and discuss how the model can help in the effort to coordinate technological and discursive developments that will ensue in this area. We argue that the approach adopted in defining the model has allowed us to produce an effective tool for coordination of discourse and technological design, and that the identification of categories has contributed a powerful element to our analysis – one which may have application in other areas of e-learning.

**Keywords:** personal learning environment, service oriented architecture, reference model

## **Who will own the new VLE? Sharing practice, problems and alternative solutions**

**Chris Jones, Gráinne Conole**

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Open University

This paper reports considerations being made by those responsible for introducing staff at a large distance university to the possibilities for developing new practices around the introduction of a new institution wide VLE. How can new or emergent practices be codified into sharable representations and shared by a large and dispersed workforce? The paper considers some current solutions such as patterns, learning design and the use of toolkits by applying a framing concept of boundary objects to understand some of the problems involved in sharing emerging practices.

**Keywords:** Virtual Learning Environment, learning design, boundary objects, patterns, toolkits, pedagogical vocabularies

## **An activity theory approach to the exploration of tutors' perceptions of effective online pedagogy**

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The School of Education, University of Nottingham (UoN), UK and Beiwai:Online, Beijing Foreign Studies University (BFSU) Beijing, China have been engaged on a collaborative project to develop a generic module for the training of online tutors as part of the eChina-UK programme. This has led to a learner centred approach to the training that provides trainee tutors with a tool that can be used to support them in taking a critical approach to the analysis of the online learning activities. Activity theory has been used as the basis for the development of this online Learning Activity Analysis Tool which supports tutors in analysing and then discussing with their peers the online activities. The online LAAT provides a rich source of data on the tutors' perceptions of effective online pedagogy. This has the advantage over other approaches such as the use of interviews and/or scenarios in that the data is captured in context with the tutors' underlying beliefs about effective teaching and learning being elicited through the use of the LAAT. The paper describes the LAAT, its use within the tutor training module and the ways it is being used to research tutors perceptions of teaching and learning.

**Keywords:** activity theory, online learning, tutor training, research, pedagogic beliefs

## **Reinventing and reinvigorating instructional design: A theory for emergent learning**

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This paper explores emergence theory as a means to interpret and redefine current approaches to and models of instructional design. Based on their extensive practical and research experience and through examples from multi-disciplinary perspectives, the authors discuss key factors from the discourse of science and architecture that are missing from contemporary instructional design approaches. Using this analysis, the authors elaborate a theory of emergent learning that transcends many existing approaches to the design and implementation of educational programs and resources. By applying this theory, it is proposed that learning can be understood from more complex and 'chaotic' perspectives, and consequently more amenable with and aligned to emergent social, recreational and educational networks.

**Keywords:** emergence theory, instructional design

## **Questioning the net generation: A collaborative project in Australian higher education**

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This paper describes a project, which has been supported by the Carrick Institute for Learning and Teaching in Higher Education, that aims to identify how the technology-based tools of a new generation of students can be successfully used by higher education. Recent commentaries propose that Universities are ill-equipped to educate a new generation of learners whose sophisticated use of emerging technologies is incompatible with current teaching practice. This project will investigate this proposed gap between learners' and teachers' use of technologies and identify the implications for higher education. This paper presents the rationale of the project, highlighting its critical stance on current notions of the 'Net Generation'. The three phases of the project – Investigation, Implementation and Dissemination – are then described. The project will be undertaken as a collaboration between staff at The University of Melbourne, the University of Wollongong and Charles Sturt University. In the final stages of the project, members of the ascilite community will be able to participate in practical workshops based on the lessons we have learned from questioning the 'Net Generation'.

**Keywords:** net generation, digital natives, learning, educational technology

## **A partnership for iPod pedagogy: Using the technology of millennial learners across educational contexts**

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This paper explores collaboration between researchers at the tertiary level, with primary school teachers and their students as iPods are integrated into learning experiences. Embarking on this partnership, it is our aim to weave value-added, mutually beneficial and collaborative relationships into our on-going professional interactions as we work towards the development of a pedagogical framework to support classroom teachers in using iPods and podcasting in their educational settings. Such collaborative relationships have been promoted as a way to foster professional relationships, provide learning opportunities for educators, encourage change and develop common understanding across contexts.

Appropriate pedagogy and procedures to assist educators in the incorporation of this technology within their classroom context have begun to emerge through professional collaboration, observation of the students and interviews with both teachers and students. This study provides example for educators who collaborate with researchers to incorporate new technologies into their teaching. It also presents our experiences with team building and communication, which have proven valuable in the process of integrating iPods and podcasting into learning activities for children.

**Keywords:** iPods, pedagogy, implementation, mobile technology, primary education

## **The role of problematizing in online knowledge building**

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This paper describes an international collaboration between two classes of grade five students through an online discussion platform with one group more experienced in online knowledge building activities than the other. Using the methods of problematizing move (Koschmann yet al., 2005) and level of social construction of knowledge (Gunawardena et al, 1997), the analyses suggest that the more experienced group is better at problematizing the discourse or discovering areas of disagreement in the discussion. With the joint-discussion with the more experienced group, the discourse of the students in the novice class changed from more information-centered towards advanced levels of knowledge building.

**Keywords:** collaborative learning, problematizing move, online discussion, online knowledge building

## **Monitoring e-learning environments through analysing web logs of institution-wide e-learning platforms**

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Monitoring the use of web technology in teaching and learning activities at an institutional level can provide universities with valuable data to guide policy decision-making for e-learning support services. Like many other universities, The Chinese University of Hong Kong has centralized support to teachers and students through the provision of e-learning platforms, and training and educational advice on e-learning strategies. The paper examines how the logs kept in the centralized platforms support the University in monitoring e-learning at an institutional level. The logs provide information on three common areas of interest concerning web use: its popularity, nature of use and the engagement of the participants. The paper also illustrates, with data from the University, the analysis and reporting that can be done with the logs to enrich our understanding of the University's e-learning in these three areas.

**Keywords:** e-learning, institutional level, monitoring, platforms, logs, staff development

## **Moving towards a university-wide implementation of an ePortfolio tool**

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University of Wollongong

The University of Wollongong has been strategically exploring ePortfolios since 2002. Building on lessons learnt from student trials across two different disciplines in 2002/3 and 2006, the project team is on the verge of implementing a university-wide ePortfolio tool customisable for all students across all faculties. This paper describes the steps taken on the road thus far, including a description and justification of a new project structure and consultative framework developed to guide the implementation.

**Keywords:** ePortfolios, cultural change, consultative framework, curriculum integration

## **Modelling blended learning environments: Designing an academic development blog**

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CEDIR

University of Wollongong

A major challenge facing academic developers is meeting the development needs of both time poor academics and those staff in multi-location campuses, especially sessional tutors, who may start teaching several weeks before electronic access is enabled. Necessary restrictions placed on access to local intranet and Learning Management Systems meant rethinking how to meet the needs of all staff and in the process model good practice through the use of blended learning environments. One regional university, with seven national and one international campus, is currently redesigning their staff development program to incorporate the use of blogs and wikis to provide access for all staff to a collaborative space to support improved teaching. This paper provides a rationale for the new direction and outlines the design phase to incorporate the use of collaborative technologies within the staff development program. It outlines the challenges faced in designing the environment and provides an overview of the design for the pilot phase.

**Keywords:** staff development, blogs, wikis, blended learning environment, sessional tutors

## **Who's designing what for whom? Comparing taxonomies in web-based educational design galleries**

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Web-based galleries of educational design examples are a display space for educational innovation and a construction space for the educational identities involved in the growing educational innovation business. Taxonomies of seven web-based educational collections are compared and analysed in terms of how identities are constructed for the educational design model range, the teacher audience and educational design practice. The design collections struggle to form a coherent structural frame around their field of common interest not because they lack structures to build upon but through failure to deal with existing structures, starting with the common interest itself, shared by all without being clearly articulated by any. Other structural blind spots are apparent in the lack of representation for learning in workplace and community settings and in a failure to clearly distinguish the perspective of design user from that of design producer. A sharper focus on the user context in educational design classification would be helpful not only in improving the structure and usability of future educational design collections but also in facilitating communication generally between users and producers of educational design.

**Keywords:** educational design, instructional design, learning design, repositories, re-usability, dissemination of innovation, e-learning

## **Reusing learning designs: Role play adaptations of the Mekong and Ha Long Bay e-Sim**

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Macquarie University

This paper reflects on the reuse and adaptation of a learning design in a different university context and in migrating from one lecturer to another. Building on and adapting the learning framework of the Mekong e-Sim (McLaughlan et al., 2001) the Ha Long Bay e-Sim forms the major assignment for students enrolled in the third year unit GEOS311 Asia Pacific Development (Department of Human Geography, Macquarie University). The e-Sim is a structured web-based role-play simulation designed to develop learners' understanding of the multiple perspectives on issues related to development and conflict over the use of resources within the world heritage site of Ha Long Bay, Vietnam. This paper examines the experience of both the lecturers and students as the e-Sim was adapted over a four year period to meet changing student needs and a different university context, including reuse within a new operating environment and a diverse student base. Student perceptions of learning outcomes are analysed, revealing a positive response to the learning experience. The paper concludes with some recommendations on the reuse of an e-Sim learning design and identifies research and development questions for further investigation.

**Keywords:** learning design, online role play, Mekong e-Sim, reusability, migration

## **Educational animation: Who should call the shots?**

**Richard Lowe**

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Curtin University

Despite the increasing popularity of animation for explaining dynamic subject matter, research shows it is not uniformly beneficial for learning. User control has been suggested as a way to enhance learning by ameliorating negative effects of animation. However, giving learners the responsibility for controlling how an animation presents its information does not always produce the anticipated benefits. It appears that the associated interrogation tasks can over-tax learners' internal processing resources so that extraction of relevant information is prejudiced. More prescriptive animation presentation regimes may be superior to free user control, particularly for learners who are novices in the depicted domain.

**Keywords:** animation, user control, learning, interrogation strategies, complex content

## **Is role-play an effective teaching approach to assist tertiary students to improve teamwork skills?**

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Edith Cowan University

Often student teams become dysfunctional as a result of inexperience and lack of prior knowledge. This exploratory study implements and evaluates a framework that attempts to scaffold teamwork skills through role-play activities. The review highlighted five essential teamwork skills that are supported with teaching materials. The results indicated that measuring change in team performance is difficult. However, the study showed that role-play was an effective teaching approach and well received by the students.

**Keywords:** teamwork, role-play, skills development, graduate attributes, communication skills, active listening, decision making, interdependence, interpersonal skills, conflict resolution

## **Bringing e-learning home: An experiment in embedding e-learning using departmental e-learning advocates**

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This paper provides an overview of an innovative project currently being undertaken in English departments in the United Kingdom. The project explores the effectiveness of a departmental or other subject-based unit approach to support for the embedding of e-learning in Higher Education. It seeks to provide answers to the question of how effective and sustainable e-learning practice can be encouraged in a departmental teaching community with a departmental e-learning advocate. Their role is to act as both a catalyst for change within a department and a source of practical help and advice for those wishing to make greater use of e-learning. Six departments, representing a range of contexts and modes of 'advocacy', have been selected for the 2006-7 academic year. The project aims to investigate whether we can be smarter about the integration of new technologies at subject level, while at the same time asking questions about the cultures within which academic and teaching communities understand, and come to terms with, the need to change their practice.

**Keywords:** e-learning support, English studies, embedding, cultural change, staff development

## **iPod, uPod? An emerging mobile learning tool in nursing education and students' satisfaction**

**Margaret Maag**

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An increasing number of healthcare educators are using mobile learning applications, such as educational podcasts, in order to facilitate and enhance students' learning. Ubiquitous mobile technologies are becoming more important in healthcare training because of the scarcity of educators and the increase in the number of first- and second-degree students enrolling in schools of nursing. Academic podcasts provide students opportunities to access face-to-face or distance audio presentations and instructor feedback in a convenient manner. However, further adaptation of this popular technology requires empirical research in order to determine the impact of the mobile media revolution on instructional design and learning effectiveness. Nursing students enrolled in a medical-surgical didactic course report high satisfaction with this up-and-coming mobile multimedia educational opportunity.

**Keywords:** learning, experiential, educational technologies, M-learning, nursing, education, pedagogy, theories

## **Who is learning? A preliminary study of an online e-learning dissemination strategy**

**Mary Jane Mahony**

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University of Sydney

Use of an online good practices site at the University of Sydney, the Health Sciences e-Learning Resource Centre, was examined using WebCT visitor data. Results indicated continuing expansion of site awareness and demonstrated patterns of activity across the calendar year. Analysis of 2006 users made visible a substantial proportion categorised as providing online teaching support.

**Keywords:** e-learning, diffusion of innovation, staff development, learning designs

## **Educational design and online support for an innovative project-based course in engineering design**

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School of Mechanical and Manufacturing Engineering  
University of New South Wales

**Belinda Allen**

Educational Development and Technology Centre  
University of New South Wales

A new course in Engineering Design and Innovation used a project-based learning approach to facilitate learning the design process, the development of design thinking and the skills required to solve open-ended design problems. The course involved over 950 first year students, in the Faculty of Engineering at the University of New South Wales. Students were enrolled in nine schools of engineering in the faculty. A WebCT Vista course was used to support student learning in design teams and to integrate and manage the course. Online facilitation methods were used to support student learning during several phases of the design process. Online peer assessment and review processes were used to encourage reflective learning and be time-efficient for academic staff. The paper includes survey data from the first offering of the course.

**Keywords:** design, engineering design, project-based learning, online facilitation, student peer assessment, student peer review

## **What do first year students think about learning graphics packages?**

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The University of Adelaide

This paper discusses the assessment of the change from Auto-des-sys's FormZ to @Last's Sketch Up as the primary CAD program in first semester, first year, delivered through a new compulsory course, Human Environments: Design and Representation, and the introduction of a graphic design based elective course, Imaging Our World, in the School of Architecture, Landscape Architecture and Urban Design at The University of Adelaide. The evaluation process involved pre and post semester questionnaires, weekly feedback from students and course SELTS. The aim is to accurately determine students' interests in digital media in design and to introduce new and relevant digital media components into the undergraduate degree to provide a suitable and structured lead-in to the Masters of Digital Media program.

**Keywords:** digital media in design, educational evaluation

## **Chinese higher education teachers' conceptions of e-Learning: Preliminary outcomes**

**David McConnell, Jianhua Zhao**

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Over the past three years, the Centre for Studies in Advanced Learning Technologies, Lancaster University, and the School of Network Learning, Beijing Normal University, have been involved in the development of e-Learning courses and in carrying out research into e-Learning. During this collaboration, we became aware of cultural differences in our approaches to the design and implementation of e-Learning courses. This led us to consider the differences and similarities in our conceptions of e-Learning, and their effects on the design, development and implementation of e-Learning courses. A new comparative research project looking at UK and Chinese higher education teachers' conceptions of e-Learning was established. This paper reports on preliminary results of phenomenographic interviews with higher education teachers in China working in 'conventional, campus-based universities concerning their conceptions of e-Learning. The interviews were analysed from a grounded theory perspective that resulted in a set of preliminary conceptual categories namely the centrality of the lecture, online cooperative learning, network learning, student learning, and infrastructure and access. Discussion of these categories is presented which illuminates the state of e-Learning in Chinese higher education. We conclude that the dominance of traditional teaching methods in China is unlikely to present the conditions for mainstreaming e-learning in the near future.

**Keywords:** conceptions of e-learning, phenomenography, China higher education system, student learning

## **Electronic delivery of oral feedback on graphic design projects**

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**Mary-Jane Taylor**

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The characteristics of feedback that support students' learning have been described. However, the learning preferences of today's students (e.g. use of current technologies, expectation for flexibility and immediacy), when combined with the declining amount of time students spend on campus, may translate into particular expectations about the mode of delivery and time and place of receipt of assessment feedback. This study reports graphic design students' and their teacher's perceptions of the advantages and disadvantages of oral feedback recorded on an ipod and emailed to students as a digital voice file. Students' questionnaire responses suggest the advantages of this mode of delivery

outweighed the disadvantages and support the learning preferences of this m-learning generation. For time-poor university teachers seeking to balance the tensions between timeliness, quantity and quality of feedback for student consumers, who are frequently not on campus to receive that feedback in a face-to-face session, electronic delivery of pre-recorded oral feedback may be one way to meet students' learning preferences.

**Keywords:** electronic, oral feedback, assessment, graphic design

## **The role of e-teaching in e-learning**

**Jacquelin McDonald**

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Interaction has long been a defining and critical component of the educational process, and it has been suggested that asynchronous interaction may provide an ideal environment for learning. Promoting interaction requires rethinking of traditional learning and teaching roles, informed by research into learning and teaching activities, and the outcomes of such interaction. This paper presents the findings of doctoral research that used a grounded theory approach to generate insights into how participants interacted in an asynchronous, text-based discussion environment. A brief review of the impact of existing management structures on the introduction of learning is provided. The paper then presents the findings that emerged from the study and reflects on the teaching role that challenges some existing conceptions of a diminished role for teachers.

**Keywords:** computer mediated communication, teaching, learning, distance education

## **Learning object: A new definition, a case study and an argument for change**

**Jenny McDonald**

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A recursive definition of 'learning object' is proposed which supports the possibility of infinite variety in terms of how a learning object is constructed and used by teaching staff and students. The new definition is bound to two key properties of a learning object, reusability and use for learning, and places no theoretical limit on the size of a learning object. The proposed definition of learning object is derived from the development pattern that emerged during the course of a large collaborative project to develop a series of information literacy modules. The proposed definition is tested against the current generally agreed properties of learning objects, and against the outputs of the project from which the definition was derived. The new definition is also compared with some existing definitions and an argument is presented for why it may prove more useful, in both theory and practice, than its predecessors.

**Keywords:** learning object, recursion, reusability, granularity, SCORM

## **You, me and iLecture**

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This paper explores the implementation of iLecture for a second year accounting unit at Macquarie University. The research found that students interacted with iLecture in ways that were not entirely expected. Students appear to want more control over their learning environment and technologies. An example of this is iLecture as it has the potential to provide students with choices about how and where they learn. The majority of students that used iLecture also attended face-to-face lectures. Teaching staff also used this technology to listen to lectures before tutorials. This assisted with the constructive alignment of lectures and tutorials for the large number of staff involved in the unit. We argue that understanding how students are using new technologies such as iLecture, and the lecturers' experience of iLecture, could provide useful insights into how academics can utilise these technologies to provide a more fulfilling interaction with students.

**Keywords:** teaching and learning strategies, emerging technologies, ICT policies and strategies, iLecture, ICT, teaching, higher education

## **Beyond marks and measurement: Developing dynamic and authentic forms of e-assessment**

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**Joe Luca**

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E-learning has transformed both pedagogy and learning environments and a new generation of learners has emerged, who require immediacy, connection and personalised opportunities for both formal and informal learning. Instead of using narrowly defined learning outcomes tested by examinations, social software tools offer scope for social connection and self-governed assessment tasks such as critical inquiry, collaboration and team work, giving learners multiple channels of expression, and perspective taking. While social software tools can be closely inter-woven with learning management systems, and be used to scaffold authentic tasks for assessment, there remain design and pedagogical challenges. The paper critiques current practice and analyses several examples of dynamic, resource-based, sustainable e-assessment that support lifelong and self-regulated learning.

**Keywords:** authentic assessment, dynamic assessment, e-learning, generic skills

## **Online student contracts to promote metacognitive development**

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Knowing about one's own cognitive ability, and how best to use this ability in understanding new educational content, solving problems and making effective decisions is one of the holy grails of education! Metacognition is widely perceived as being integral to effective learning and much literature and research has been devoted to this area. However online learning environments that effectively support the development of students' metacognition are rare and difficult to develop. This paper describes one component (the student contract) of an online learning environment designed to support the development of metacognition through a cycle of planning, monitoring and evaluation. Students firstly complete a self assessment questionnaire that helps expose their preferences and orientations; this forms the basis of the student contract. The design and logic of the student contract is outlined, with an overview of the complete strategy being used to help promote metacognition.

**Keywords:** metacognition, negotiated assessment, teamwork

## **The 'copy and paste' function: A flawed cognitive tool in need of redesign**

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University of Wollongong

This paper argues that the traditional version of the 'copy and paste' function used in many computer-mediated learning environments is a flawed cognitive tool for learning applications and may in fact subvert the constructivist philosophy of many learning packages. An initial study was conducted, using distributed cognition theory to redesign the interface of the 'copy and paste' function, to examine the efficacy of embedding a specific interaction strategy (reported in Morgan et al., 2006a, 2006b). The embedded interaction strategy involved summarisation note taking tasks and the results of this empirical study are outlined in order to establish the efficacy of this approach. This paper goes on to argue that this principle can be extended to include a wider variety of interaction strategies designed to invoke different encoding techniques (Lutz, 2000), including note taking, categorisation and concept mapping. By embedding different interaction strategies into the interface of the 'copy and paste' function an effective processing strategy emerges as a consequence of employing the tool. In addition the learner is exposed to a range of processing strategies and may become conscious of choosing the appropriate interaction strategy for the specific task at hand, thereby improving

their metacognitive skills. A series of further studies are advocated to examine the effects of the approach that has been outlined.

**Keywords:** distribute cognition, mediating artefacts, cognitive tools, constructivism

## **Benchmarking e-learning in UK higher education**

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In early 2006 a new programme was launched aimed at benchmarking e-learning development across the UK higher education sector. The programme represents an early stage in the Higher Education Funding Council for England ten-year e-learning strategy, acknowledging the need to take stock of progress. This paper describes the background to the benchmarking programme, its approach, and some findings from the pilot.

**Keywords:** organisational change, ICT policy, benchmarking

## **Increasing success in first year courses: Assessment re-design, self-regulation and learning technologies**

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Concerns about non-completion and the quality of the first year student experience have been linked to recent changes in higher education such as modularisation, increased class sizes, greater diversity in the student intake and reduced resources. Improving formative assessment and feedback processes is seen as one way of addressing academic failure, of enhancing the learning experience and students' chances of success in the early years of study. This paper argues that, if this is to happen, a broader perspective on the purposes of formative assessment and feedback is required; one that links these processes to the development of learner self-regulation. Drawing on the current literature, the paper presents a set of principles for the effective design and evaluation of formative assessment and feedback processes. It then shows, through two case studies drawn from a large £1m Re-engineering Assessment Practices (REAP) project, how ICT might support formative assessment processes, academic success and the development of self-regulation in large first year classes.

**Keywords:** formative assessment, feedback, self-regulation, first year experience, student success

## **Professional development for professional developers: Who's learning about e-learning from whom?**

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This paper examines the critically reflective approach of a group of academic support staff in the design, development and evaluation of an e-learning resource. The resource was a showcase of examples of electronic learning and teaching approaches developed at Monash University titled Designing Electronic Learning and Teaching Approaches (DELTA). This paper does not focus on the resource itself, but rather on the critically reflective approach used, which drew on the features of participatory action research and was extended to include a participatory component in the evaluation of the site so that the outcomes of this process could be formally accommodated in data collection. The paper explores this critically reflective approach as a model for e-learning developers to monitor and progress their own professional development, engaging in collaborative dialogue to enhance their professional practice.

**Keywords:** teaching and learning strategies, educational paradigms, research methods and approaches, learning communities/collaborative learning, personalised learning

## **The trial of learning objects: Exploring the design and delivery of VTE courses with learning objects**

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**Peter Higgs**

TAFE Tasmania

**Rose Shum**

TAFE NSW

**Lisa Wait, Dominic Lou**

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This paper describes a project undertaken in the Australian vocational training and education (VTE) sector that sought to investigate success factors associated with the design and delivery of courses using learning objects (LOs). The project explored the strategies used by three teachers as they used digital repositories to

discover learning objects, and then applied the objects through a content management system to create online courses. The paper reports the factors that were found to influence the online learning settings that resulted and teachers' perceptions of LOs as building blocks for online courses.

**Keywords:** learning objects, learning designs, vocational education, teacher uptake

## **How does hypermedia support learning? The role of different representational formats and varying levels of learner control for the applicability of multimedia design principles**

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During recent years, hypermedia and web-based learning environments have become increasingly important in educational contexts. The advantages they offer compared to traditional learning methods (like books) include the possibility to access information in a nonlinear and self-controlled fashion. Additionally, information can be presented in different representational codes (e.g., text, pictures) and address different sensory modalities (e.g., visual, auditory). However, the question arises how these aspects should be combined to design a hypermedia environment that enables active, self-regulated and constructive learning and fosters knowledge acquisition. Our studies investigated whether well-established multimedia design principles apply to hypermedia as well. Results show that these principles cannot simply be transferred to hypermedia environments and that certain representational formats do not foster learning per se but that it is necessary to carefully look at the affordances that these representations provide for retrieval. These results will be presented and discussed with respect to their implications for the design of further studies.

**Keywords:** hypermedia learning environments, multimedia design principles, learner control

## **Online student portfolios for demonstration of engineering graduate attributes**

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Engineers Australia is the Australian professional body that accredits undergraduate engineering programs. It espouses an ‘outcomes-based’ program accreditation philosophy, but imposes mandatory ‘process’ requirements for off-campus programs that are in addition to the requirements for conventional on-campus programs. The focus on off-campus engineering study raises the question: how can learning outcomes, regardless of mode of study, be effectively measured? The current answer appears to be ‘graduate attributes’. The literature reveals a range of sophistication in approach to graduate attributes from identifying desirable graduate attributes, through to evidence-based certification of individual student attainment of graduate attributes. Many engineering accrediting bodies around the world identify student portfolios as a strategy for demonstrating student attainment of graduate attributes. The increasing use of online technology by students and educators alike, including as part of assessment, means that many of the reported applications of student portfolios are online portfolios. The effectiveness of online student portfolios will depend on them being embedded in day-to-day educational practice, rather than being an optional extra given a low priority by busy students. This paper presents a survey of the related literature and briefly outlines a project in progress at Deakin University to trial an online student portfolio.

**Keywords:** graduate attributes, student portfolios, online portfolios

## **Mediated electronic discourse and computational linguistic analysis: Improving learning through choice of effective communication methods**

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The author conducted research on the ways in which electronic mail, forums and chats are used within an online distance, open and virtual learning environment (WebCT) at a French University, for both on and off-campus students. This article briefly describes research on how computational linguistic analyses help us understand language evolution in the context of higher/further education and research. Results may lead teachers and tutors to choose more effective communication methods, thereby improving overall learning.

**Keywords:** mediated electronic discourse, computer-mediated communication (CMC), computational linguistics, virtual-learning environments (VLE)

## **A pragmatic and strategic approach to supporting staff in inclusive practices for online learning**

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Changes in legislation, an emphasis on widening participation and the increasing reliance on online techniques for learning and teaching have contributed to improved opportunities for students with disabilities to participate in Higher Education. Many accessibility advocates would argue that accessibility should be the primary consideration for the development of online resources, but in the academic setting it is usually teaching staff who are largely responsible for the production of their own electronic resources. Academics may lack the time, expertise and the motivation to undertake inclusive practices. This paper explores means of supporting academic staff in the creation of accessible and inclusive online learning materials through activities designed to create an empathy with the student experience, coupled with targeted, timely and appropriate training. We go on to outline the proposals for incorporating accessibility into an institutional strategy for e-learning and proposals for further research.

**Keywords:** accessibility, inclusion, staff development, online learning

## **Going with the grain: Mobile devices in practice**

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Fifty-seven alumni of a global Masters programme participated in research into their use of mobile devices. Drawing on questionnaire and interview data, the paper examines how far the devices were embedded in the personal and professional lives of these alumni, most of whom were aged 35–54. All had experience of online and distance education, and most worked in education or training. The study revealed some innovative uses of mobile devices, a selection of which is reported in this paper. The paper links the findings to wider debates about the changing relationship between learners and educational institutions, and the role of mobile devices in enabling individuals to engage in learning conversations. Data are provided on which devices were used by the alumni and for what purposes, and the paper explores the implications of these findings for educators.

**Keywords:** mobile devices, context, informal learning, moblogs, social networking websites

## **Implementing new technologies across the organisation: The LAMS@Macquarie project**

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The LAMS @ Macquarie University Implementation Project is an enterprise-wide project which aims to develop and promote the use of LAMS (the Learning Activity Management System) across the University. This paper is a brief exploration of some of the early indications from the research conducted during Stage 1. We consider some of the challenges of adopting the next generation of e-learning tools, in particular the issues surrounding adoption and dissemination, establishment of a community of practice, and creation and sharing of reusable learning designs.

**Keywords:** implementation, LAMS, Learning Activity Management System, reusable learning designs, community of practice

## **Tools used in Learning Management Systems: Analysis of WebCT usage logs**

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This paper investigates the use of tools within WebCT Campus Edition 4. Internal usage tracking data was analysed to determine the extent of use of WebCT tools within individual units of study at five universities, primarily Murdoch University. An innovative algorithm, using a geometric distribution, was used to categorise use of the tools. The research found that WebCT was heavily used in a teacher-centred mode, with the majority of use in provision of content to students, and in students reading messages from their lecturers. Tool use which emphasised student-centred learning was only apparent in a small number of cases. These results were relatively comparable with those from four other universities. The paper concludes with a discussion of the implications of the observed behaviour.

**Keywords:** WebCT, usage logs, Learning Management Systems

## **Repurposing an online tutor training resource**

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This paper presents a reflective case study that illustrates the challenges associated with repurposing, for the human health sciences, an existing high-quality staff development and tutor resource website originally developed by the Faculty of Veterinary Sciences at the University of Sydney. The discussion focuses on the experience of negotiating, planning, and executing repurposing the site for staff development and tutor support in postgraduate programs offered by the Faculties of Health Sciences and Medicine. Benefits and challenges associated with repurposing this resource within the same overall university context are considered.

**Keywords:** e-learning, reuse, repurposing, online tutor training, health sciences

## **Learning from Web 2.0 practices: A tool to support real-time student collaboration**

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This paper describes the conceptual design of a prototype tool, currently in development, that facilitates productive collaboration in a synchronous environment. The tool could be used to bring the benefits of a tutorial to lecture and online environments. The design and development is based on successful Web 2.0 practices, and its use is considered in terms of an interpretation of Laurillard's Conversational Framework.

The outcome of the development project is a generic tool that enables a shift of some facilitation activities from a learner-teacher mode of delivery to a learner-peer supported network. Suggested uses of this tool are discussed including tasks involving analysis, synthesis and evaluation. Finally methods to integrate the tool into assessment processes are presented.

**Keywords:** learning communities, collaborative learning

## **Supporting peer assessment of individual contributions in groupwork**

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The ability to assess the work of others is a core attribute for most professionals. To develop this graduate attribute in our students requires the learning of self and peer evaluation, feedback, and review skills. This paper discusses the changing design of peer assessment and the impact of a new groupwork support tool within a capstone undergraduate subject with large student numbers – Systems Development Project – in the Faculty of Information Technology at UTS.

Since 1998 by implementing different support strategies for peer assessment of individual contributions the distribution of the students marks has markedly widened, and now more reflect the reality of differing team member contributions. This substantial change has occurred with the use of an online tool which supports the development of student evaluation, feedback and review skills when peer-assessing individual contributions to large group projects. In use since 2004 the groupwork support tool is called Team Contribution Tracking (TeCTra).

**Keywords:** designing peer assessment, online learning support, developing graduate professional attributes

## **Fun and feedback at the press of a button**

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A common phenomenon across disciplines and universities is that students complain that they do not receive enough feedback, even when student evaluation forms indicate satisfaction in other areas such as teacher competency and enthusiasm. On the other side, but less considered, is the lack of feedback that teachers receive as they struggle to get students to participate and engage with the learning process. While technology does not offer an automatic solution, keypad-based automatic response systems do offer the potential to let both parties know how well the learning outcomes are being achieved in a timely and cost-effective manner. We have just completed two years of pilot trialling of such technology at our university in the Computing and Physics Departments. This paper reports our experiences together with the findings of others.

**Keywords:** feedback, collaborative learning, socratic learning, keypad-based technology, personal response system, computerised audience response systems (CARS)

## **The evolution of audiographics: A case study of audiographics teaching in a business faculty**

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Audiographics was an established educational technology prior to the development and spread of the World Wide Web (Web) in the early 1990s. First generation audiographics products used bridged telephone lines (audio) and modem linked computers (graphics) to synchronously connect an instructor with groups of students. In the second half of the 1990s the use of the Web increased dramatically and traditional audiographics use declined. Since the early 2000s, and as part of the development of a second generation of Web services, Web 2.0, a new generation of audiographics tools, now commonly termed collaborative or Web conferencing software, have become available. This evolution of the audiographics technology and its associated instructional capabilities is explored via a longitudinal case study of the use of audiographics in the Faculty of Business at Southern Cross University. Following a review of the first and second generation products used, we identify and show how four key lessons from the initial period of use have been addressed. We focus particularly on how the fourth lesson (flexibility of the delivery format) has been addressed and present preliminary data gathered from early student and staff adopters about their use of second generation audiographics during Semester 2 of 2005 and Semester 1 of 2006. We conclude by briefly discussing some potential developments and suggesting that second generation audiographics offers the opportunity to seriously re-think the nature of student-to-student and student-to-staff communications in the context of our learning and teaching environment.

**Keywords:** audiographics, tele-teaching, Electronic Classroom, Elluminate Live!, teaching business online, web conferencing, virtual classrooms, synchronous tools

## **E-Scholars: Staff development through designing for learning**

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Although the importance of engaging students in learning through interactivity during the learning process is well documented, faculty and instructional developers often fail to consider learning design during the curriculum design process. In face-to-face and online courses, curriculum is often developed by staff in isolation, with a focus on *presenting* content rather than on learning design that promotes student *engagement* with content as well as interaction with peers and instructor. This paper describes the design, implementation, evaluation and next steps of the 'e-Scholars Programme', an innovative approach to staff development

designed to guide faculty as a cohort to successfully integrate online learning with the face-to-face classroom using the T5 instructional design model (Salter, Richards, & Carey, 2003, 2004) to expand the learning environment.

**Keywords:** staff development, blended learning, feedback, instructional strategies, course design, learning communities

## **Design and evaluation of an e-learning environment to support the development and refinement of clinical reasoning and decision-making**

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Emerging paradigms of clinical reasoning skills are tending to veer away from linear and clinical competencies towards generic professional skills and decision making processes. In the present study, occupational therapy students have previously complained that they do not receive enough support from the university or their peers during fieldwork placements, when they are expected to demonstrate clinical reasoning skills. Supervisors have observed that occupational therapy students, as novices, have difficulty in demonstrating strong clinical reasoning skills in the fieldwork setting. In this situation, the end-user (i.e. the patient or client) may not receive the optimal level of care and it is therefore imperative to scaffold students' reasoning skills to prepare them as working professionals. This paper will explore the design and evaluation of a moderated online forum to support the development and refinement of clinical reasoning (a form of critical thinking) skills in occupational therapy students undergoing fieldwork placements. An innovative analytic content-based instrument derived from current models of clinical reasoning is applied to a corpus of data to measure students' skills, and on the basis of results obtained, to suggest ways of enhancing the online environment to support emerging decision-making skills among novice practitioners.

**Keywords:** online asynchronous discussion; clinical reasoning; critical thinking; occupational therapy; health professional education; instrument development

## **Impact on student learning: Student evaluations of online formative assessment in fluid mechanics**

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This paper looks at the way in which students in core second and third year units of study are using a set of automated practice calculations which have been developed with automatic marking and feedback, and prepared and delivered online. The calculations are in spreadsheet format and are downloaded by students from a *WebCT* site. Every time students open a file they are presented with a new set of data to practice on. These calculations were introduced into a 2<sup>nd</sup> year unit in semester 2 2005 and a 3<sup>rd</sup> year unit in semester 1 2006. The students' use and perceptions of use in general were correlated with student performance on complex calculations questions in the final examination. The results of this analysis will: a) improve the student learning experience in relation to the way in which the online resource is being used to complement face-to-face teaching; b) develop a model for the provision of online automated practice activities to be made more widely available throughout the School of Civil Engineering and the wider University.

## **Design-based research and the learning designer**

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The role of the learning designer has expanded from the commonly known activities of an instructional designer to incorporate a range of new roles, largely prompted by new technologies. In this paper, we articulate an approach that further extends the role of the learning designer to encompass evaluation and design-based research, in collaboration with the subject matter expert. Such collaboration is professionally enhancing for both parties, and adds to the sum of knowledge on the effective design of learning environments, by documenting and disseminating the learning design process.

**Keywords:** learning design, instructional design, design-based research, evaluation

## **Integrating culture in the second language curriculum through a three-dimensional virtual reality environment**

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Networked computer technologies have a strong potential for enhancing second language (L2) learning in the modern classroom. Three-Dimensional Virtual Reality Environments (3D VREs), in particular, provide features to support student motivation, socialization and interaction. These include, for example, the ability for L2 learners to present as avatars, build virtual structures and interact with others in conversational modes. In this preliminary qualitative case study, we examine the perception of culture through online exchanges between both Japanese and English learners within the Virtual Babel project. Critical reflections and an agenda for further research conclude our paper.

**Keywords:** culture and technology, teaching and learning strategies, learning communities

## **How experienced teachers learn in the information age**

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Experienced teachers as digital immigrants are teaching the digital natives to learn in the information age. The digital immigrants prefer to employ a number of abilities or multiple intelligences (Gardner 1983) to learn about software that can be beneficial to their students. These experienced teachers with limited ICT exposure are interested in: learning how to *push buttons* (P), thinking how to *apply* software to their practice (A) and are willing to *change* their practice using ICT (C). This paper discusses a study of experienced teachers with limited ICT exposure and their preferred way of learning, as they PAC for the information age.

**Keywords:** experienced teachers, multiple intelligences, ICT exposure, digital immigrants and digital natives, PAC framework

## **Why don't students attend lectures and what can be done about it through using iPod nanos?**

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How can teachers encourage students to listen in lectures – and indeed to attend them? What about international students and those who have language difficulties? These were the questions which triggered a study of the beliefs of first year students about learning from lectures, and a desire to improve students' ability to learn from lectures through providing MP3 uploads and a classroom set of iPod nanos. Students completed a pre- and post-course evaluation which revealed their beliefs about lecture attendance and supplementing that attendance by listening to lectures on iPods for revision and re-listening.

**Keywords:** contemporary challenges, personalised learning, iPods, audio streaming, educational evaluation, m-learning, teaching and learning strategies

## **Implementing e-learning across a faculty: Factors that encourage uptake**

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The development of e-learning resources, the educational design and outcomes of their application dominate the e-learning literature. Less often considered, but equally significant, is the manner in which these resources are implemented and integrated into existing curricula and teaching contexts to promote sustainable use as well as high quality student learning experience. We describe our experience of the implementation of e-learning platforms utilising a centrally supported learner management system supplemented by Faculty developed innovative e-learning tools designed to stimulate learning through inquiry. The Faculty's implementation strategy focussed on incorporation of e-learning activity across the curriculum to enhance the existing on-campus experience. Shared leadership promoted innovation and encouraged staff to utilise e-learning approaches tailored for their teaching context that were authentic and constructively aligned to the graduate attributes, and to share their learning from these experiences. Significant aspects of the success of this strategy included the provision of high quality educational design, empowerment of staff to experiment, timely staff development, focus on the relationship of the specific learning outcomes to the graduate attributes, development of customised flexible and easy to use resource development platforms and a strong focus on student learning experience monitored by reflection and research.

**Keywords:** organisational change, infrastructure and management, ICT policies and strategies

## **Persistent technologies: Why can't we stop lecturing online?**

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There is much in the literature concerning teaching and learning online that advocates using the online environment to promote interaction and communication amongst students. Despite this much of what happens in practice in this area is focused on preserving and translating lecture materials to the online environment. This paper explores possible historical reasons for the apparent resilience of lectures. It also examines some of the issues raised by the persistence of lectures and some possible ways to address these issues.

**Keywords:** technology change, theory in use, educational paradigms, lectures, history

## **Blogging for learning: Integrating social networks for staff development**

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This paper provides the background and context to a pilot study to investigate the use of blogs (personal reflections) and wikis/clogs (blogs used for collaborative reflections) to support authentic learning, communication and the development of communities of practice within a higher education environment. The study is supported by the ascilite Community Mentoring Program and the results of the investigation will be reported in full at the conference.

**Keywords:** staff development, blogs, clogs, authentic learning, social networks, communities of practice

## **Student learning processes using an online PBL module in an art and design education course**

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The PBL approach is used to encourage deep learning on tasks that reflect the complexity of 'real world' professional environments. Using an online learning environment as part of the PBL approach enables the students to be self-directed in their approach to problem resolution. This study considers the design of an online PBL module and how students used the online resources in their group work on a professional practice problem. Student interaction is considered from an analysis of online discussions to reveal learning processes. An end-of-course survey reveals student perceptions of this approach.

**Keywords:** problem-based learning, collaborative learning, online learning, online discussion, art education

## **Impact of video recorded lectures among students**

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This study evaluates the impact of video recorded lectures on students who have accessed them as part of their studies at the Nanyang Technological University. A survey was designed and administered to this group of students. In addition, data on the usage of video recorded lectures between July 2005 and June 2006 was extracted from the server. The findings indicated that the usage among students has been far beyond expectations. It also suggested that the video recorded lectures have benefited the students as it has enhanced their learning experience in the University.

**Keywords:** teaching and learning strategies, ICT policies and strategies

## **Influence of teacher beliefs on web-enhanced learning experiences: Learners and teachers**

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Research into teacher beliefs and practices in a web-enhanced environment have often failed to consider the influence of participant belief systems about web technologies in learning and teaching contexts in conjunction with these beliefs more generally. The findings from this study emerged as part of a larger PhD investigation into university teacher beliefs about web technologies, learning and teaching, and the enactment of these two belief systems in practice. For this paper, the influence of the belief systems of three award-winning university teachers on practice is explored in relation to learners and teachers and the design of web-enhanced learning experiences.

**Keywords:** academic teacher beliefs, web technologies, e-teaching, web-enhanced, learning experience, learning design, academic development

## **Pragmatic approach to learning materials**

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An important yardstick by which any innovation may be judged is that of uptake by users. In the context of teaching and learning, innovative approaches do not necessarily need to involve a high level of technology. Indeed, there are robust arguments that support the use of tried and tested approaches and tools that are used in novel ways. Staff hesitancy to innovate may be alleviated if they do not need to be continually retrained (e.g. in the use of new software). An approach that is being adopted successfully at The University of Newcastle is the use of a customised Microsoft Word template as a course-authoring environment, which is distributed to students as PDF files via Blackboard or CD. This paper explores the challenges presented by this approach and contrasts these with the benefits that accrue. It provides evaluation of stage one of the University of Newcastle's Course Template pilot project, and discussion of the current work in progress on stage two of the project.

**Keywords:** templates, innovative teaching and learning approaches, learning design, case-studies, problem-based learning

## **Computer-mediated interaction in context**

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This paper reports research into the impact of computer-mediated interaction on both students and tutors in the context of a course-specific case study. Quantitative data provided evidence of successful achievement of learning outcomes and high student completion rates. Tutors identified interaction as one in a number of successful features in the course design, about which they were very positive, in spite of the increased workload it entailed. Exploration of student data revealed both positive and some unintended negative effects associated with a highly interactive and activity-led approach to learning. These findings emphasise the importance of the context for interaction, in terms of the effective combination of both content and interpersonal interaction, the strong link with assessment and the content and design of activities. Tutors and students reported high levels of enjoyment and engagement as key features sustaining the success of a stimulating pedagogy.

**Keywords:** interaction, computer-mediated communication, activity design, distance education

## **Podcasting, student learning and expectations**

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This paper presents preliminary results of a trial of podcasting in six law units involving 1244 students during semester 1, 2006. The data revealed a rapid uptake and acceptance of podcasting with few difficulties. The vast majority of students perceived podcasting as having excellent value, particularly lectures and to a lesser extent, tutorials. Podcasting altered study habits, with students spending more time reading primary materials, and a minority of students spending time transcribing podcasts. Podcasts did not reduce participation on WebCT discussion forums. Podcasts were expected by students to be delivered within three days, with students prepared to accept lengthier downloads for improved quality. The paper discusses the main advantages and disadvantages of podcasting as revealed by student users. There is no doubt that audio podcasting has now become an essential requirement for teaching tertiary students within the law units. The challenge will be for UNE to create workflows to meet the expectations of students as to quality and service delivery.

**Keywords:** podcast, online learning, m-learning

## **Describing a design pattern: Why is it not enough to identify patterns in educational design?**

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University of South Australia

In this paper we analyse the use of patterns across a number of fields including architecture, software development and educational technology design. Focusing on the reusability of a pattern outside its area of development, we have identified several issues related to the context and the value system of a pattern. The paper draws together lessons learned from different fields where patterns are already used and described. We conclude with a recommendation of pattern descriptors and guidelines which improve their applicability in varying value systems.

**Keywords:** design patterns, pattern format, design complexity, research and design values

## **Thoughts on blogging as an ethnographic tool**

**Mary-Helen Ward**

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University of Sydney

The personal development that takes place within the institutional framework of the PhD has in the last decade attracted the attention of researchers and bureaucrats in Australia. The institutional framework that supports the degree, the experiences of individual students at set points in their process, the experiences of supervisors and the development of pedagogies of research have all been subject to investigation. However, the development of web logging software (blogging) has now made it possible to undertake a longitudinal study of a group of candidates. My project aims to create a community of PhD candidates who are prepared to both maintain weblogs (blogs) themselves and to read and comment on the blogs maintained by the other members of the group. Through these blogs I hope to 'open a window' onto an experience that has been characterised as mysterious and even inherently distressing. Issues have been raised concerning both studies and education conducted in online mediums: whether the internet is a culture or a cultural artefact, how it is understood and viewed by its users, and whether the degree of performativity inherent in self-presentation on the internet might be fatal to authenticity. These discussions are pivotal to the development of my PhD.

**Keywords:** online ethnography, doctoral process, blogs as research tools, research pedagogy

## **Use of visualisation software to support understanding of chemical equilibrium: The importance of appropriate teaching strategies**

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**Christine Brown**

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University of Wollongong

This paper describes the results of a study in which a group of science pre-service teachers used computer-based visualisation software resources to develop teaching strategies and lessons that would support the development of students' conceptual understanding of chemical equilibrium. They used SMV: CHEM, VisChem and chemistry software packaged with textbooks. The goal was to assist science/chemistry teachers to design lessons that would overcome known difficulties in developing students' understanding.

Four teaching strategies of one teaching team are described in detail to illustrate the multifaceted nature of the way in which the software resources were used in lessons. Such a process of software deconstruction and resource integration in lesson plans has implications for all teachers of chemistry.

**Keywords:** visualisation software, conceptual understanding, chemical equilibrium, teaching strategies

## **Student evaluations of e-learning technologies in undergraduate psychology: A blended model for the future**

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Undergraduate Psychology moved teaching materials from the school intranet to the University Learning Management System (*WebCT*) during 2005. This change took place to avail students of interactive, reflective and adaptive new e-learning technologies. This blended learning approach allowed academics to both provide lecture materials online as well as add to the student experience. Specifically, this has been achieved through the complete redevelopment of learning materials for first year, the incorporation of online discussions – with a dedicated online tutor for second year, and online formative assessment for both first and second year units of study. 2,456 student evaluations of the functionality and educational components of the online units of study were analysed for first and second semesters in 2005. The results of this analysis will i) help determine the e-learning materials which

students desire and need, ii) influence the way we develop online components of units of study in the future, and iii) determine time and staffing commitments for the development of online resources.

**Keywords:** blended learning, interactive e-learning, student evaluations, online tutor

## **Moving from face-to-face to online classrooms: The reflective university teacher**

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University of Calgary

**Elizabeth Stacey**

Faculty of Education  
Deakin University

This study explores the similarities, differences and possible interaction between two small groups of Canadian and Australian university teachers' face-to-face and online teaching approaches and philosophies. The paper compares their perspectives on teaching face-to-face and online at two comparable Canadian and Australian universities, both of which offer instruction in these two modes. Teaching philosophy data were gathered with the 'Teaching Perspectives Inventory' developed by Pratt and Collins at the University of British Columbia, which assessed participants' teaching approaches and philosophies in terms of their beliefs, intentions and actions in both modalities. The study upon which this paper is based builds upon a well established research partnership of the two authors who have previously explored emerging philosophies of learner centred teaching in distributed classrooms in Canada and Australia.

**Keywords:** philosophy of teaching, teaching perspective, theory of practice, cultural differences, face-to-face and online teaching, institutions of higher education

## **The Lectopia service and students with disabilities**

**Jocasta Williams**

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The University of Western Australia

The Lectopia lecture capture and publication system was introduced to The University of Western Australia in 1999. Since this time the project team has regularly received feedback from students with disabilities or medical conditions, as well as from the University's Diversity Projects Office, regarding the positive impact Lectopia has had on their learning activities. Throughout the project's history the feedback received from these two groups, predominantly provided informally, has helped to shape the system's development. In 2006 the team undertook to conduct a thorough analysis of why and how students with disabilities or medical conditions are using Lectopia, the perceived benefits derived and the

problems encountered. It is anticipated that results from this analysis will further assist the project team to refine the system to ensure it continues to meet the needs of the University's diverse student population.

**Keywords:** lecture recordings, students with disabilities or medical conditions, accessibility

## **Throwing a pebble into the pond: E-portfolios and student engagement**

**Hazel Willis, Phil Gravestock, Martin Jenkins**

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This paper reports on initial findings and implications of the use of e-portfolios for students' planning, reflecting and recording elements of their learning; issues surrounding student engagement are also discussed. A pilot study of the *PebblePad* e-portfolio software was conducted with a cross section of students: eight first year and six final year dissertation students. First year students were using the e-portfolio for their Personal Development Planning. Interviews were conducted with first year students mid semester and also at the end of their first year. Interviews were also conducted with final year students upon submission of their dissertations. Results revealed a higher level of engagement from final year than from first year students. Overall, final year students appreciated the usefulness of *PebblePad* and engaged well with the e-portfolio in the early stages of the dissertation process; however, engagement after the initial stages of the dissertation declined with students reverting to regular e-mail for contact in addition to their regular face-to-face meetings.

**Keywords:** e-portfolios, personal development planning, student engagement, dissertation support

## **Facilitating uptake of online role play: Reusability, learning objects and learning designs**

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**Anne McDougall**

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University of Melbourne

This study tracks the uptake of online role play in Australia from 1990 to 2006 and the affordances to its uptake. It examines reusability, as one affordance, from the perspective of two often polarized constructs: Learning Object and Learning Design. The study treats "reuse" on two levels: reuse of an existing online role play and reuse of an online role play as the model for another role play. In keeping with terminology that has come into recent use, we propose that the first level implies the online role play is used as a Learning Object and the second level implies the

online role play is used as a Learning Design. Thirty six role plays were identified in Australian universities, of which 80% were reuse of a Learning Design. Only three examples of role play as Learning Object were found, indicating that so far Learning Design is the more useful concept in understanding reusability in universities. Other affordances to uptake of role play were also tracked. The contribution of Educational Developers far outweighed that of colleagues, conferences, journals and engines. The results have implications for the work practices of Educational Developers and for managers of Learning Object Repositories.

**Keywords:** reusability, learning objects, learning designs, online role play

## **Gathering online representations of practice about assessment for use as a professional development tool: A case in progress**

**Gail Wilson, Rosemary Thomson, Janne Malfroy**

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University of Western Sydney

The Assessment Snapshots digital resource at the University of Western Sydney is a current project to produce locally contextualised resources about effective assessment practice. Assessment case studies showcased through the project offer insights into how individual teachers in the disciplines design assessment strategies which respond to the challenges of teaching and learning in the tertiary sector in the 21<sup>st</sup> century. Resources produced are designed as online professional development tools for self-access by teachers and for use in assessment workshops and curriculum renewal projects. The paper explores the rationale for using case studies as a form of representation of practice, and describes the processes taken by a team of academic developers to gather cases from individual academics, provides initial reflections on those processes, and proposes plans for using the resource and evaluating its effectiveness as a trigger for improvement in assessment practice.

**Keywords:** online professional development, representations of practice, case studies, assessment

## **At the limits of social constructivism: Moving beyond LMS to re-integrate scholarship**

**Lisa Wise, James Quealy**

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The University of Melbourne

After more than a decade, the early claims that e-learning would transform university teaching are yet to be realised. As e-learning, with learning management systems as the centrepiece, becomes entrenched in the mainstream, there is growing demand for a solid theoretical research base to inform e-learning practice. We argue that the lack of a solid research base is in part due to the inherent difficulties with cross-disciplinary research where shared terminology does not

always equate to shared meaning, and in part due to the dominant applied research approach emphasising a case-based approach over research aimed at addressing specific hypotheses derived from educational theory. We use the popular social constructivist theoretical framework to illustrate a lack of theoretical rigour in e-learning research. We examine traditional university teaching as portrayed through a social constructivist lens and argue that academics already adopt the 'reflective practitioner' model in their teaching practice. We then examine the concept of adaptive self-organising learning networks in e-learning. We argue that, while a social constructivist framework may be ideal for understanding the way people learn, it is at odds not only with the implicit instructional design agenda, but also with current university e-learning governance and infrastructure.

**Keywords:** educational paradigms, learning communities, collaborative learning, organisational change, research methods and approaches

## **Understanding complex calculations: Automated spreadsheets with built-in feedback**

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The e-Learning team at the University of Sydney was approached to help develop a resource that would address some areas of learning difficulty that had been identified in two engineering units of study. Complex spreadsheets were developed, then automated with VBA code to provide the students with a formative assessment resource, based on scaffolded learning with immediate feedback. Twenty spreadsheets were eventually made available to second- and third-year students. Student evaluations have led to further development of the feedback features to make it clearer to students why some answers were correct or incorrect, and thus to improve their conceptual understanding of the principles behind the mathematical calculations.

**Keywords:** teaching and learning strategies, instructional design, personalised learning

## **Designing reusable online clinical reasoning templates: A preliminary evaluation**

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As increasing resources are devoted to the production of online learning materials it is important that both the usability of such resources by educators and the educational usefulness of these resources for student learning are evaluated. Outcomes from such evaluations provide information that can be used to inform future development of online learning materials. This paper describes two clinical reasoning templates that were developed to enable easy incorporation of content materials by educators without specialist web design skills, and easy access to the materials by students with minimal software requirements. Preliminary evaluation data will be presented describing the usability of the templates by educators and students.

**Keywords:** online learning, health science education

## **Learning through online discussions: A focus on discourse analysis and language functions**

**Dai Fei Yang, Peter Goodyear**

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The University of Sydney

This paper examines how an online postgraduate program made use of a discussion forum to engage students in meaningful discussions. The authors aim to capture and extract elements of its success using detailed discourse analysis, informed by systemic functional linguistic (SFL) theory. This involves examining three domains: first, the ideational experience when students construct the content of postings in which they present their social and ideational positions, philosophical beliefs and ideas; second, the interpersonal experience when students construe their social relationship with their readers/audience; third, the textual organisation of their discussion texts in relation to the language patterns and linguistic resources that emerged when their texts unfold. Through detailed discourse analysis, the paper illustrates two examples of the use of hedging and metaphor to provide an insight into the good practice shared by students, and how text functions in online

discussions. We find that students, by using various linguistic resources, such as hedging and metaphors, share their experience and pre-knowledge to develop solidarity and authorial voice. In conclusion, the SFL framework presented in this paper provides a valuable tool for the description and analysis of online discourse. However, at the social interpersonal level and the ideational level we need to develop a more comprehensive model for analysing texts generated in the highly complex process in online learning and discussions.

**Keywords:** online discourse analysis, hedging and metaphor, knowledge construction, epistemic games, epistemic activities, language skills, cognitive skills

## **Teaching through technology-enhanced environments in higher education: Moderating for effective computer conferencing**

**Maria Zenios**

CSALT

Lancaster University

The emergence of the 'knowledge based society' places extra pressure on university teachers to develop students' knowledge and skills. Although focus has shifted from teaching to student centred-based learning it is still useful to investigate university teachers' approaches to teaching through networked technologies. Previous research indicates that the success of the online activity is influenced by the person who organises and facilitates the discussion (Berge & Collins, 2000). The role of the leader or 'moderator' in motivating the participants, channelling the discussion and deliberately handling difficult situations is crucial. The recognition that the moderator's work makes a great difference to the success of computer conferencing creates a pressing need to research new approaches to teaching online. Located on the socio-cultural framework, this study suggests that the moderator's role is crucial in sustaining conferences through the structuring of the learning resources inherent in the conferences.

**Keywords:** online teaching, moderation, computer conferencing, situated learning

## **Analysing teaching design repositories**

**Danyu Zhang, Rafael Calvo, Nicholas Carroll, John Currie**

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The University of Sydney

We describe a software application that supports teaching, research and administration by integrating a teaching design repository with a statistical reporting tool. In this paper we describe a quantitative approach that supports institutional collaboration and the assurance and improvement of quality teaching. The tool analyses key features in unit of study outlines and synthesises the information. Most data are collected from internal administrative processes within the faculty. The prototype system is designed to present various kinds of information from the different points of view of students, academic staff and academic managers who have access to information produced by the reporting tool.

**Keywords:** quality teaching, reporting tool, statistical analysis

## **A lexical analysis of 1995, 2000 and 2005 ascilite conference papers**

**Craig Zimitat**

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Papers from the 1991, 2000 and 2005 ascilite conferences were analysed to identify key themes and concepts that have emerged from the thinking and research of Australian academics working with learning technologies. In 1995, themes were related to student learning and software / multimedia development. In 2000 there was a focus on student learning and specific products. In 2005, the online learning environment, learning activities and outcomes were key themes. Key themes in the whole collection of papers were the examination of most facets of “going online” and learning activities/assessment.

**Keywords:** lexical analysis, students, learning, learning technology, research themes

### ***Appendix***

#### ***Poster presentations***

The Merlin Affair: Addressing students’ needs in learning media law through the use of multimedia environments

*Des Butler*

Understanding the impact of tablet PCs on student learning and academic teaching

*Steve Clark, Lucy Taylor, Joanne Pickering, Andrew Wait*

New activity centred technology challenges students of midwifery: An evaluation

*Ingrid D’Souza, Maria Miller, Jeremy Gauder, Ian Kershaw*

Developing online postgraduate coursework to promote change in animal industries

*Hannah Forsyth, Chris Moran, Jaime Gongora, Ruth Laxton, Julius van der Werf*

“I haven’t studied for twenty years and now I have to do it online”: Online orientation for postgraduate students in veterinary science

*Hannah Forsyth, Meg Vost, Jenny-Ann Toribio, Sarah Graham, Karen Black, Ruth Laxton*

Benchmarking e-learning: The UK experience

*Eddie Gulc*

Reducing staff and student workload: Redevelopment of an online law unit

*Kerryn Jackson, Bill Potter, David Lindsay, Len Webster, Kathy Buxton, Melissa deZwart*

I want to tell you a story...

*Martin Jenkins, Kenny Lynch*

Investigating teachers authoring their own learning designs

*Matthew Kearney, Anne Prescott, Kirsty Young*

Learning to teach online online: Training remote facilitators in postgraduate veterinary science programs

*Ruth Laxton, Hannah Forsyth, Jenny-Ann Toribio*

The collaborative work between learning technologists and academics in implementing online learning

*Yik Sheng Lee, Siaw Way Poh*

Semi-automated assessment and workload expectation mapping

*Melinda Lewis, Mary Jane Mahony, Ann Poulos*

Do we know what skills our students think are being tested in exams?

*Jennifer Lingard, Laura Minasian-Batmanian, Ian Cathers, Mary-Jane Mahony, Gilbert Vella*

Team Contribution Tracking System (TeCTra) for assessment of individual contributions in groupwork

*Andrew Litchfield, Ryszard (Richard) Raban*

A French Master's degree in e-learning: Are the students' needs met?

*Debra Marsh, Rachel Panckhurst*

Interactions of students in online graduate courses

*Joyce McCauley, Susan Wegmann, Catherine Stoicovy, Mary Robbins*

Podcasting and education: Time to start listening

*Leon Newnham, Charlynn Miller*

Evaluation of genetics educational technologies used by science teachers

*Amy Nisselle, Gregor Kennedy, Sylvia Metcalfe, MaryAnne Aitken*

There's more to it than instructional design: The role of individual characteristics in hypermedia learning

*Maria Opfermann, Peter Gerjets*

Bringing together accessibility research and enterprise activities

*Elaine Pearson, Steve Green*

Pilot study to review use of WebCT in taught units

*Lynnae Rankine, Janne Malfroy*

Living English simulation learning for non-native English speakers

*David Ross, Fiona McMullen*

Debating pain: A collaborative online group activity

*Grace Tague, Liz Devonshire, Allan Molloy, Stephen Loftus, Philip Siddall*

What is ED?

*Elizabeth Tuckerman*

All the world's a stage: Using dramatised scenarios to foster discussion in online management courses

*Keith Tyler-Smith*

21st Century higher education management: Networked educational management

*Philip Uys*

Developing effective digitally-enhanced blended learning environments: A comparative study of Australian universities

*Philip Uys, Janet Buchan, Linda Ward*

Blending synchronous and asynchronous forms of communication in an online teacher education class

*Miriam Weinel, Chun Hu*

Online learning modules: Does one version fit all?

*Alexandra Yeung, Siegbert Schmid, Roy Tasker*

Multimedia learning and the World Wide Web: Considerations for learners with a mental retardation

*Peter Zentel, Maria Opfermann, Jan Krewinkel*

## **Workshops**

What makes blended learning “good”? A conceptual model supported by real examples

*Josie Csete, Paula Hodgson, Peter Duffy*

Online information literacy e-learning modules from the OIL project: Project background, module use, and adaptation for use in new contexts

*Bronwyn Hegarty, Jenny McDonald, Dawn Coburn*

Designing engaging online learning experiences

*Anouk Janssens Bevernage, Sue Dark*

Architectures for effective online learning and performance

*Elena Kays, Rod Sims*

Giving effective and interactive presentations

*Tony Koppi, Elaine Pearson*

How to develop ‘on-demand and on-the-go’ ubiquitous educational multimedia for connected communities

*Margaret M. Maag*

Embedding quality guidelines into e-learning practice

*John Milne, Andrew Higgins*

A comprehensive introduction to Elluminate Live!

A Web browser based synchronous learning and teaching environment

*Stephen Rowe, Allan Ellis*

Course re-design within a community of practice model

*Diane Salter*

Using iPods & iTrips as knowledge acquisition tools for problem-based learning in the workplace

*Paula Williams, Beth Hobbs*

Improving your publications profile

*Craig Zimitat*