How are Australian higher education institutions contributing to change through innovative teaching and learning in virtual worlds?

Brent Gregory **University of New England**	**Sue Gregory** **University of New England**	**Denise Wood** **University of South Australia**
Yvonne Masters University of New England	**Mathew Hillier** University of Queensland	**Frederick Stokes-Thompson** University of South Australia
Anton Bogdanovych University of Western Sydney	**Des Butler** Queensland University of Technology	**Lyn Hay** Charles Sturt University
Jay Jay Jegathesan University of Western Australia	**Kim Flintoff** Curtin University of Technology	**Stefan Schutt** Victoria University
Dale Linegar Victoria University	**Robyn Alderton** TAFENSW Western Institute	**Andrew Cram** Macquarie University
Ieva Stupans University of New England	**Lindy McKeown Orwin** University of New England	**Grant Meredith** University of Ballarat
Debbie McCormick Monash University	**Francesca Collins** Monash University	**Jenny Grenfell** Deakin University
Jason Zagami Griffith University	**Allan Ellis** Southern Cross University	**Lisa Jacka** Southern Cross University
John Campbell University of Canberra	**Ian Larson** Monash University	**Andrew Fluck** University of Tasmania
Angela Thomas University of Tasmania	**Helen Farley** University of Southern Queensland	**Nona Muldoon** Central Queensland University
Ali Abbas The University of Sydney	**Suku Sinnappan** Swinburne University of Technology	**Katrina Neville** RMIT
Ian Burnett RMIT	**Ashley Aitken** Curtin University of Technology	**Simeon Simoff** University of Western Sydney
Sheila Scutter James Cook University	**Xiangyu Wang** The University of New South Wales	**Kay Souter** La Trobe University
David Ellis Southern Cross University	**Mandy Salomon** Swinburne University of Technology	**Greg Wadley** University of Melbourne
Michael Jacobson	**Anne Newstead**	**Gary Hayes**

DE Hub
innovation in distance education

VWWG
Australia & New Zealand
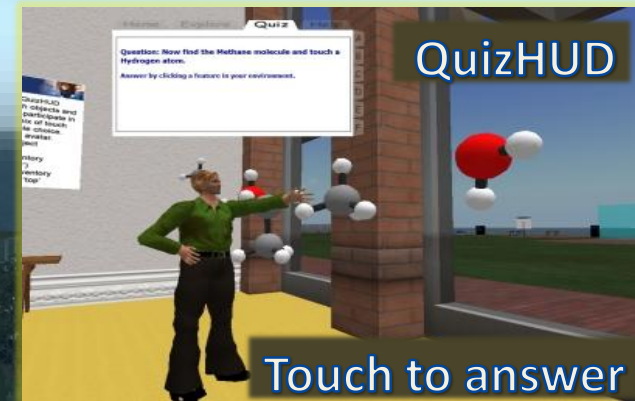Virtual Worlds Working Group

Access

- Assessment
- Collaboration
- Communication
- Engagement
- Stepping-stones
- Simulation

Assessment

- Marking can be automated

- Conducting assessment tasks when other barriers are in play

- UniAd have established 'Transforming Assessment' island in SL as a resource for academics to improve VW assessment activities
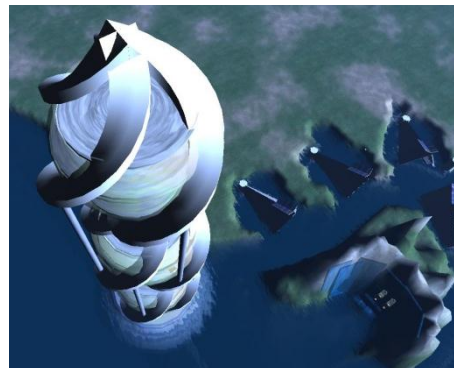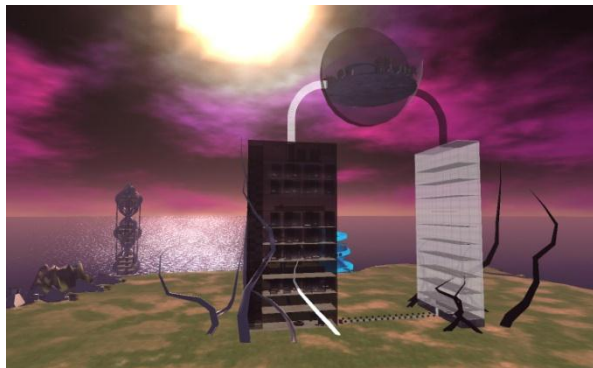
University of Adelaide

- Marking can be automated

- Conducting assessment tasks when other barriers exist

- 'Transforming Assessment' (UniAd) island in SL is a resource to demonstrate VW assessment activities

QuizHUD

Touch to answer

Talking Prims

Sloodle Quiz

Macquarie ICT Innovations Centre

Student visions of sustainable architecture

Collaboration

- VWWG - members have produced over 300 articles on virtual worlds
- List of publications at virtualworldsworkinggroup.wikispaces.com
- Overcoming the tyranny of distance
- Increased collaboration and networking - students, staff and international
- Cross-disciplinary
- Cross-institutional
- Cross-border research
- International collaboration on research and
- We are not aware of any similar collaboration internationally with the exception of academics from New Zealand universities who are part of this group

Monash University

Teaching and research activities since 2007

- Faculty of Pharmacy & Pharmaceutical Sciences
- Faculty of Arts - Chinese Studies
- Faculty of Arts - Behavioural Studies
- Faculty of Education – Instructional design and theory
- Faculty of Law – Intellectual Property
- Five Islands (sims)

Chinese Studies

Bringing language learning alive

- High fidelity virtual Chinese language and culture environment
- Task-based, contextualized learning
- Blended learning within traditional curriculum

Behavioural Studies - Digital Selves

- Theoretical and applied understanding of the implications of working, socialising and learning in online environments
- Skills necessary to flourish in virtual and mixed realities.

Pharmacy and Pharmaceutical Science

Pharmatopia – an international virtual world collaboration

- Twelve international schools of pharmacy
- Moved to Open Sim in Jan 2011
- Five learning modules completed, two more under development
- ~ 500 students each year use modules
- Commercial development of modules for pharmaceutical industry for global training

University of Southern Queensland

Criminal Law

Restorative environments

AI Bots

AUSTRALIAN DIGITAL FUTURES INSTITUTE

ENCKE Virtual University Collaboration

Encke Virtual University Collaboration

Australian literature classes

Communication

- At the heart of what virtual worlds do
- Synchronous and asynchronous communication
  - EG Traditional Lecture
- Demonstrate student work
- Machinima
- Communicate something about who they are
  - UWA & SCU - mirroring physical presences
  - Deakin - visual arts - appealing use of colour and light

Charles Sturt Uni

"I think you can get clarification on a lot of issues too ... sometimes its very difficult to actually work out what you're doing, as a DE student ... To be able to talk that over with your lecturer or with your fellow students is a huge bonus".

Deakin University

Augmented 'in-world' synchronous and asynchronous learning sessions and conventional "real world" workshops, tutorials and e-learning materials; support a move from directed instruction to collaborative interactive group learning, a community of learners.
Learning scenarios within a constructivist framework encourage collaborative engagement between students to actively engage with and use new technologies.

Engagement

- Engagement is multidimensional
- Students have a sense of energetic and effective connection with the activities they are undertaking
- 'high level of engagement in virtual world-based activities by young male construction students'
- Increased participation
- Increased interaction
- Greater willingness to share
- Virtual worlds - increased sense of 'being there'

University of New England

Role-Play

Web Quests

Lectures

Engagement

Tour

Discussion s

Excursions

une
University of
New England

Tamsyn Lexenstar

Jass Easterman

Aristotle Jigsaw

University of Canberra

Telework Island, Second Life

University of TAS

FACULTY OF EDUCATION

Students engage within the fictional world of Shakespeare's Macbeth, role-playing and interacting within Macbeth's headspace, to develop an understanding of Macbeth's changing psyche throughout the trajectory of the play

Curtin University

Bentley Campus, Western Australia

Nursing and Midwifery Wound Clinic

Stepping Stones

- Overcome barriers
  - Physical
  - Cultural
  - Geographic
  - Psychological
  - Financial
- Examples
  - reducing performance anxiety
  - supporting international students
  - students with a disability to increase confidence and participation
  - create a virtual support centre - provides skill development opportunities and solutions for the users
- Several institutions - use virtual worlds to eliminate many of the social and cultural barriers to engagement in the classroom

Simulations

- Rich tapestry of opportunities for educators
  - mock trials
  - virtual pharmaceutical compounding dispensary (UQ)
  - pharmaceutical virtual laboratory (Monash)
  - defence (UniSA, CSU, USQ)
- Enable educators to:
  - add lifelike contexts to learning
  - contextualise otherwise abstract and dry education principles

University of South Australia
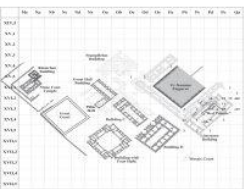

Employability skills development

Career resource access

University of Western Sydney

- Historically authentic simulation of the ancient Sumerian city (city of Uruk, 3000 B.C.)
- Students learn history and culture through interactions with A.I. controlled avatars

HUMAN: Fisherman Andel

AGENT: Fisherman Jigsaw

FishermanUruk1 Andel   20:57
What are you waiting for?

FishermanUruk2 Jigsaw   20:57
I'm waiting for you to start fishing

FishermanUruk1 Andel   20:57
How do I do it?

FishermanUruk2 Jigsaw   20:58
You should grab the spear that is on your left and sit inside the boat

phase 1)   phase 2)   phase 3)

Challenges

- Bandwidth and computer hardware - LAG
- Software needs to be downloaded on a computer
- Basic skills needs to be acquired (movement and communication)
- Institutional constraints (e.g. firewalls) and financial constraints.
- Virtual world work initiated on minimal budgets by motivated academics
-

How have these challenges been overcome?
- Upgraded computer
- Technical support
- professional development
- immersive learning experiences
- Research
- professional literature
- Support from senior management
- development of appropriate non-player characters to assist with teaching and designing of pedagogy, lessons and tasks
- Collaboration with other institutions provided professional development, guest lecturers or join forces during lessons with students.
- external assistance such as machinima and non-player characters to assist with their lessons
- many members of the VWWG are migrating to other VW platforms.

Questions?

Other Examples of Communication

QUT Qld Uni of Technology

Communication, simulation and engagement – *Machinima* at QUT

Air Gondwana (negotiation skills)

Entry into Valhalla (legal ethics)

Sapphire Vortex (criminal law and procedure)

University of WA

University of Western Australia (UWA)

Focus on Teaching, Research, Art, Architecture, Machinima

"Whatever you can do or dream you can, begin it. Boldness has genius, power and magic in it. Begin it now"

Johann Wolfgang Von Goethe

Charles Sturt Uni

"I think it has the ability and the potential to make … study really, much more rewarding and engaging, and I would love to be experimenting with it in further subjects."

Victoria University

- **Worked with virtual worlds since 2006**

- **Focus - disengaged young people (school & VET)**

- **Platforms over time: Second Life > Skoolaborate > OpenSim > Unity**
  - **custom open source LMS**
  - **systems developed now being deployed & improved by Monash University (Pharmatopia) , C.I.T. (Nursing), GlaxoSmithKline**

- **Now working with:**
  - **construction pre-apprentices (VET)**
  - **young people with Aspergers Syndrome**

- **Have worked with:**
  - **hairdressing apprentices (VET)**
  - **multimedia students (VET)**
  - **disadvantaged high school students**
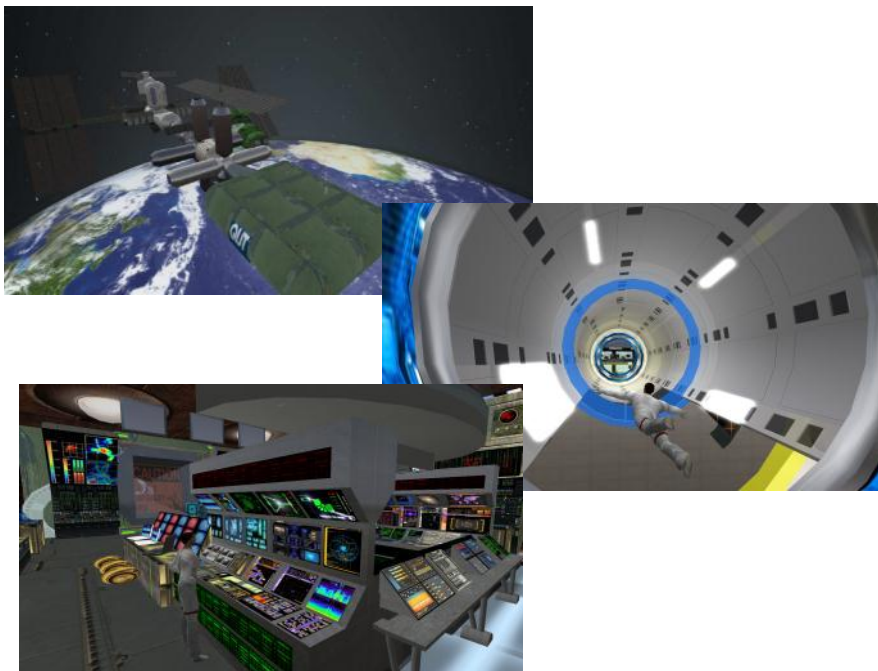 - **grammar school students**
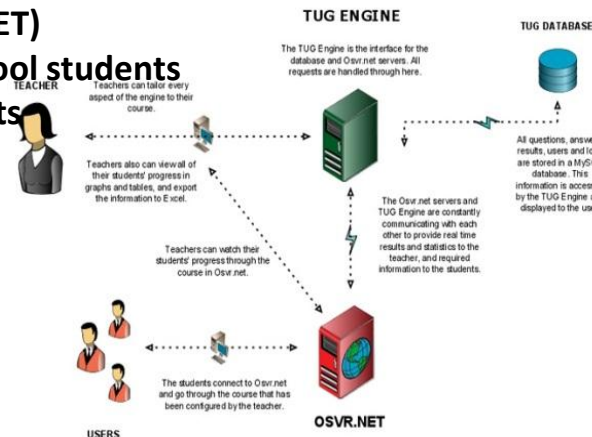
University of Ballarat

Examples of Simulation

University of New England

Pharmacist

Social work set

Qld Uni of Technology

Collaboration and simulation at QUT
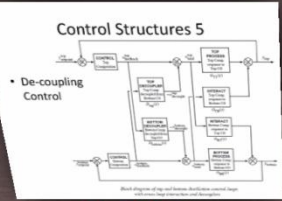

QUT Space Station
(School of Learning Design)

Landscape architecture
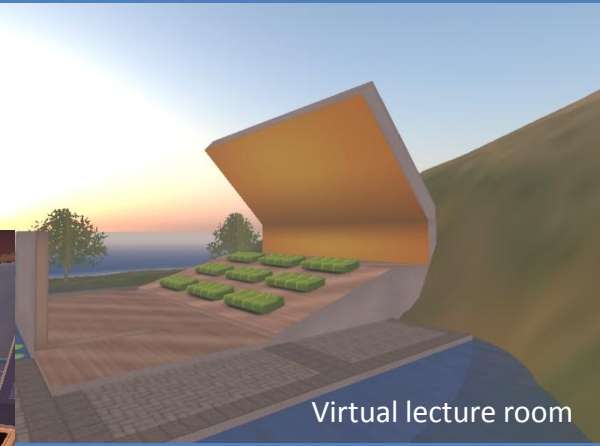(School of Learning Design)

The University of Sydney

Learning process dynamics and control in Second Life

Virtual control lab with simulated virtual plant

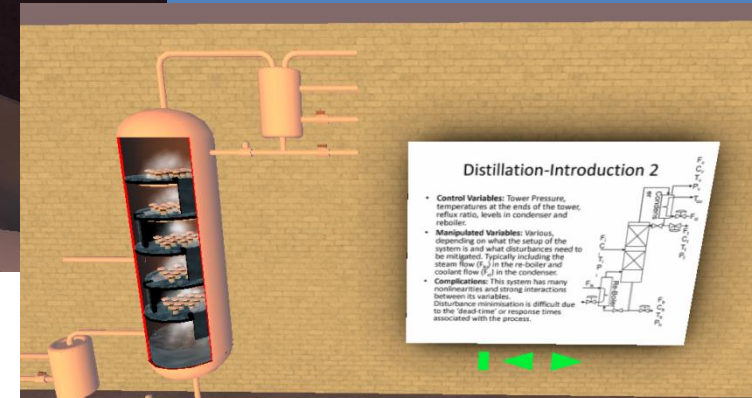Expanding the boundaries of experiential learning

Class room and lab discussions in the virtual world

Virtual lecture room

A meeting point

Learning concepts through 3D visualisation

THE UNIVERSITY OF SYDNEY

Tapping the potential of virtual worlds to augment experiential learning through visualisation and dynamic simulations.

Virtual distillation lab with visualisation of column internals

Griffith University