



Campus and the Cloud

SYMPOSIUM
hosted by u!magine

Symposium Overview

The *Campus and the Cloud* Symposium will explore and scrutinise online alternatives for many of the campus-based activities that form the core of residential schools. Demonstrations of successful applications of virtual laboratories and online clinical and professional skills practice at CSU and beyond will be provided. These demonstrations will provide the stimulus for deep discussions about the applicability of these strategies within the CSU distance education context to either supplement or replace residential schools. Speakers have been invited from a wide range of disciplines. Demonstrations will include successful applications in Health and Medical Science, Biology, Psychology, Social Work, Engineering and Education which could easily be extended to other disciplines.

Program Committee

Barney Dalgarno, ulmagine (chair)

Janelle Wheat, Associate Dean, Science

Judith Gullifer, Associate Dean, Arts

Ruth Bailey, School of Humanities and Social Sciences

Carole Hunter, QLT Online Leader, Business Justice and Behavioural Sciences

Julie Lindsay, QLT Online Leader, Arts and Education

Lucy Webster, QLT Online Leader, Science

Collaboration Format

Each presentation will be followed by time for small group discussions, prior to a whole group question and answer session. These face to face discussions will be complemented by streams of asynchronous dialogue captured in Google Docs. The day will conclude with two panel sessions which will draw out the key ideas emerging from the discussion streams during the day. Participants are encouraged to use their laptops to post comments to the Google Docs during discussions, or discretely during presentations.

Technology

This symposium will rely on technology to bridge the locations in Wagga and Bathurst. Presentations will occur from both campuses and will utilise video conferencing and screen sharing via Bridgit. Small group discussions and shared notes will be created and recorded using Google Docs.

Please, **bring your laptop or tablet to join in!**

- » Bridgit - <http://bridgit.csu.edu.au>
- » Google Docs - <http://uimag.in/CampusCloudDoc>

Program

TIME	SESSION	SPEAKERS
8.45 – 9.15	Registration + Tea and Coffee	
9.15 – 9.25	Welcome and background	PVC Sandra Wills (Bathurst)
9.25 – 9.40	Introduction & overview	Barney Dalgarno (Wagga)
9.40 – 10.30	A virtual laboratory for pharmacology education	Matt Cheesman, University of Queensland (Wagga)
10.30 – 10.45	Morning tea	
10.45 – 11.35	What can medical students learn from role playing in a virtual hospital?	Swee Kin Loke, University of Otago (Wagga)
11.35 – 12.15	“Virtual” Lab or “Virtual Lab”: How Students Engage with Laboratory Simulations	Euan Lindsay, CSU Engineering (Bathurst)
12.15 – 12.55	Lunch	
12.55 – 1.35	Skype Assessment of Professional Competencies	Rocco Crino, CSU Psychology (Bathurst)
1.35 – 2.15	Developing interactive and adaptive online resources to enhance student learning	Lucy Webster, CSU Histology & Stuart Canning, Smart Sparrow (Wagga)
2.15 – 2.55	The process of creating an online simulation for ‘interviewing skills practise’	Ruth Bailey, CSU Social Work (Wagga)
2.55 – 3.10	Afternoon tea	
3.10 – 3.50	Panel on clinical and professional practice simulations	Judith Gullifer (Chair)
3.50 – 4.30	Panel on laboratory simulations	Janelle Wheat (chair)
4.30 – 4.45	Summary and next steps	Barney Dalgarno (Wagga)
4.45	Close of formal program	
5.00 – 7.00	Drinks and nibbles	ulmagine Wagga Wagga, Engineering Building Bathurst

** Each presentation will be followed by 10 minutes of small group discussions and then 10 minutes of whole group questions for speaker and discussion*

Keynote Speakers

Matt Cheesman

Dr Matthew Cheesman is a Lecturer in the School of Biomedical Sciences (SBMS) at The University of Queensland (UQ). He is a Scholarship of Teaching and Learning (SoTL) researcher in the field of computing technologies and their integration into undergraduate tertiary education. He completed his PhD and eight years of postdoctoral research into drug metabolism and toxicology prior to engagement with SoTL academic activities. He led a study on the development of a pharmacology virtual laboratory and evaluated its effectiveness following incorporation within the curricula of science and pharmacy programs that included more than 1,000 enrolled students across four university semesters. Matt also designed and evaluated a UQ examination app for the Samsung Galaxy tablet that enabled students to complete assessment on the device using stylus writing pens and finger navigation. Thus, technology-based virtual learning remains the main priority of his work, with particular emphasis placed on the collection of evidence for the improvements to student learning that occur via the implementation of virtual laboratories and other e-learning based methodologies.



Example of a virtual laboratory

Image from the Otago Virtual Hospital

Swee Kin Loke

Swee Kin Loke is an educational designer at the University of Otago (New Zealand) where he supports teaching staff in the pedagogical use of educational technologies. He has previously held similar positions at the Ministry of Education and the Nanyang Technological University in Singapore. Kin's research focusses on computer games, computer simulations, and virtual worlds for higher education. Applications of virtual worlds which Kin has developed and evaluated have been highlighted as case studies within an international virtual worlds scoping study report and have led to a best paper award at the 2014 ascilite conference. He is in the process of completing his doctoral study in which he seeks to develop a more plausible theory to explain how students learn physical world skills by role playing in virtual worlds.

KEYNOTE ABSTRACTS

A Virtual Laboratory for Pharmacology Education

Dr Matthew Cheesman, Lecturer in Pharmacology, University of Queensland

Virtual laboratories are learning tools that are used to prepare students for a downstream "live" laboratory tasks. Online data retrieved from a virtual pharmacology laboratory module used by science and pharmacy student cohorts was analysed in order to determine how students engaged with the module. The virtual pharmacology laboratory was based on experiments that tested the effects of increasing drug concentrations on muscle tissue contraction to determine drug potency. Students worked in groups of three, with pharmacy students in first semester (53 groups) and science students in second semester (55 groups). Science students completed the overall task within a significantly shorter timeframe than pharmacy students. However, pharmacy students acquired individual key objectives using the correct experimental approach, while science students tended to exploit shortcuts to achieve these objectives. Errors committed by students were generally significantly more frequent in the science cohort as compared to their pharmacy counterpart. Therefore, science students appear willing to take shortcuts to complete virtual laboratory tasks, whereas pharmacy students are more methodical and less likely to take risks in their approach. In the coming semesters, we aim to show these data to the science students as an informed teaching practice guide in order to enhance our teaching of practical-based material.

What Can Medical Students Learn from Role Playing in a Virtual Hospital?

Swee Kin Loke, Educational Design, University of Otago, New Zealand

In this presentation, Kin will introduce role playing within the Otago Virtual Hospital (OVH) as a promising learning strategy. The OVH is a computer-based, multi-user virtual world in which medical students role playing as junior doctors make diagnoses and manage realistic clinical cases within the Emergency Department. Using their avatars, students can communicate with patients and peers, perform 'physical' examinations of patients, order laboratory tests, prescribe medicines, and write patient handover notes.

The results from two research studies on the OVH will be shared and discussed, with the aim of determining what exactly medical students can learn from role playing in virtual worlds. Gaining more precision in terms of what students can and cannot learn in simulated environments will help educators decide in what ways such virtual world learning experiences might supplement or replace residential schools and campus workshops. In addition, practical challenges in developing the OVH and in integrating it into the medical curriculum will be shared.

SPEAKER ABSTRACTS

Skype Assessment of Professional Competencies

A/Prof Rocco Crino, School of Psychology, CSU Bathurst

Abstract: The development of clinical competencies is an essential part of the training of all health professionals. Assessment of such competencies is time consuming, and is often at the expense of actual clinical training during residential schools. This brief presentation will outline current assessment practice in two Master of Clinical Psychology subjects (PSY 534 Clinical Psychopathology and PSY 536 Adult Interventions I) where competency assessments are carried out via Skype. Students report the assessments as positive clinical and personal learning experiences, as well as an important aspect of further skill development.

Developing Interactive & Adaptive Online Resources to Enhance Student Learning

Lucy Webster, Faculty of Science, CSU & Stuart Canning, Smart Sparrow

CSU became a member of the Biomedical Education, Skills & Training (BEST) Network in 2015 (<https://www.best.edu.au/>). This Network contains 3 elements: 1. Disciplinary Loops - a community of like-minded academics who develop and share educational resources; 2. SLICE - a large image database that academics and students can search, annotate and collaborate on images/virtual slides and; 3. Smart Sparrow adaptive e-learning software. Historically, it has been incredibly difficult to teach microscopy-based disciplines by distance education. Students would have limited access to standard glass slides during very intense (and stressful) residential school periods. The combination of virtual microscopy, adaptive e-learning software and analytics has resulted in significant improvements in the teaching and learning across many disciplines at CSU. This presentation will use case studies from haematology and histopathology demonstrate how this technology and the Smart Sparrow analytics has been used by academics at CSU. The development of contemporary online laboratory simulations using the Smart Sparrow adaptive e-learning software, and how such learning experiences apply several mechanics that are proven to increase learner engagement and effectiveness, will also be discussed.

The Process of Creating an Online Simulation for 'Interviewing Skills Practise'

Ruth Bailey, Rebecca Acheson and Ben Atkinson, CSU Wagga

Ben, Rebecca and Ruth present an outline of the process involved for them in creating, from scratch, an esim suitable for use in an assessment item for a purely distance education subject that once had a residential school. The purpose of the esim is to create an 'applied' scenario- in which students studying towards careers in human services and health are able to practise interviewing skills. Our project has had a short development time before being put into operation and we share our steps toward the final product within that schedule. We discuss our experiences of coming up with the design, various aspects of decision-making along the way and items we needed to create and prepare. We muse upon the pedagogical value of the esim as opposed to the traditional alternatives (skills coaching in a residential school, case study-based written assignment).

"Virtual" Lab or "Virtual Lab": How Students Engage with Laboratory Simulations

Euan Lindsay, Foundation Professor in Engineering, CSU Bathurst

Laboratory classes are an integral part of undergraduate STEM education, providing a valuable alternative to lectures and tutorials. It is now reasonably common to providing these laboratory classes through remote and virtual access-where the students are separated from the hardware and interact through a technology-mediated interface. This trend has been driven by a demand to provide increased flexibility and opportunities in the delivery of laboratory classes to students, but it has the unintended consequence of affecting the learning outcomes for students in the laboratory class. Remote and virtual laboratories are characterised by two key factors-a separation, both physical and psychological, between the students and the laboratory hardware; and a technology-mediated interface that is used to close this distance. Both of these factors have been shown in the literature to affect the way in which students learn, changing the contexts in which they construct their knowledge. The impact of these factors is such that online laboratory classes are not simply a logistical alternative to in-person laboratories-rather, they are a pedagogically different learning experience, and they must be acknowledged as such.

PANELS

Clinical & Professional Practice Simulations

Judith Gullifer (Chair), *Swee Kin Loke (Wagga)*, *Sabine Agustine, Social Work (Wagga)*, *Franziska Trede, EFPI (Bathurst)*, *Rocco Crino, Psychology (Bathurst)*

This panel discussion will explore the feasibility of using online platforms and environments to provide students with opportunities to develop and practice professional and clinical skills. The way in which such opportunities might complement, support or replace practice opportunities in on campus teaching and residential schools will also be discussed.

Laboratory Simulations

Janelle Wheat (Chair), *Matt Cheesman (Wagga)*, *Sandra Wills (Bathurst)*, *John Harper, SAWS (Wagga)*, *William Wood (Student, Wagga)*

This panel discussion will discuss the kinds of virtual and remote laboratories demonstrated and described during the day and the potential benefits to students in preparing for laboratory sessions, developing laboratory skills, or engaging with conceptual content. The feasibility of wider use across CSU and the way in which such experiences might complement, support or replace laboratory activities in on campus teaching and residential schools will also be discussed.

