Summary of Symposium

Campus and the Cloud

Hosted by u!magine

Tuesday 10 May 2016

Overview of document

This document is based on the notes collected by attendees of the symposium. It is a summary of the points raised and discussion on the day. It is not intended a full recap of the symposium but rather a snapshot of the day. For a more detailed view of what was presented on the day, please refer to the presentation slides that can be found on the u!magine website: http://uimagine.edu.au/portfolio/campus-and-the-cloud/

Welcome and Introduction

Sandra Wills, PVC Student Learning, CSU
Barney Dalgarno, uImagine, CSU

Sandra

- This day is about how we work and how we will work in 'e-University' or 'cloud university
- Destination 2020 - A roadmap for CSU's online future
- At CSU 'wholly online' also still means coming to a residential school
- How do we run residential schools and are there other ways
- The power of role-based e-learning - author Sandra wills
- Passion for role-based scenarios - examples given

Barney

- Genesis of this symposium came from data collected by CSU - students choose not to enrol in a course that has on-campus requirements
- Issue also applies to f2f students
- How best to make use of student time
- Kinds of residential school learning:
    - Orientation and networking
    - F2f teaching
    - F2f experiential practice with peers
    - Access to campus equipment
- Focus: How can some of these learning experiences be delivered online?

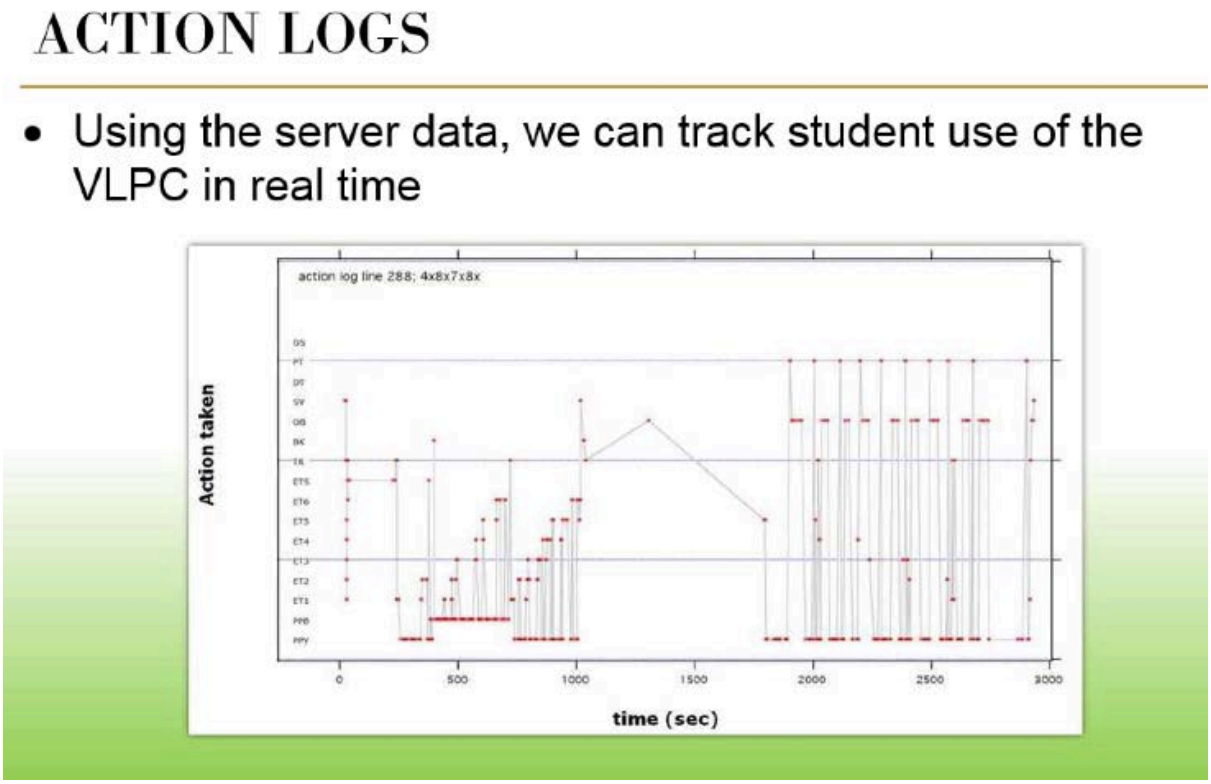
- Can we replicate networking benefits online?
- Can we simulate practical activities online?
- Many students find them valuable and not an inconvenience
- What is the balance between online and res school?
- Today we will focus on:
    - Synchronous
    - Experiential
    - Individual or collaborative
    - Simulated or connected
    - Computer simulations
    - Computer mediated role plays
    - Computer mediated communications
    - Computer mediated connections
- Technology platforms
    - Virtual worlds
    - Games platforms
    - Enhancements to a general purpose learning platforms
    - Generic communication tools
    - Case based online resources
- Examples
    - CSU Virtual Chemistry Lab
    - Using Second life for job interviews
    - Virtual Prex - pre-service teacher classroom simulation
    - Chinese language in second life
- Key Qs
    - What are the new teaching and learning strategies?
    - What strategies have been most successful?
    - How applicable are they to CSU?

A virtual laboratory for pharmacology education

Dr Matt Cheesman, Lecturer in Pharmacology, University of Queensland

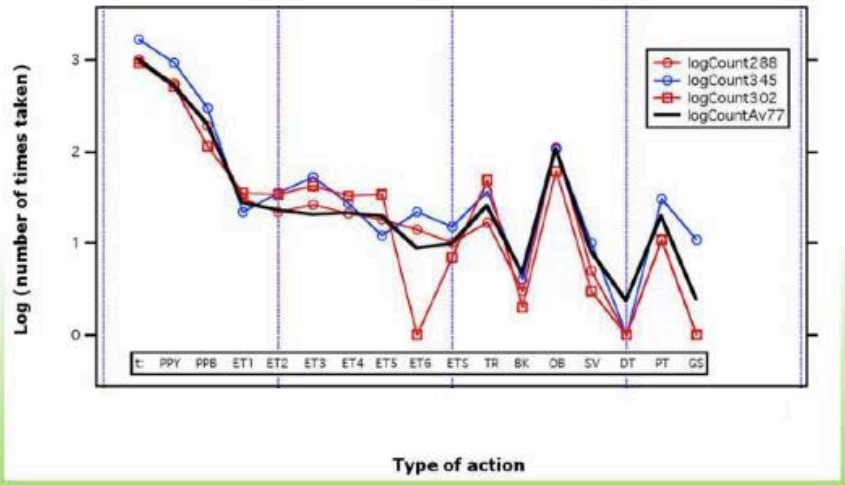
*What were the **most important ideas**, teaching strategies or technologies presented?*

- Pre-lab virtual experience - focus of UQ where there are no distance ed students as such
- VLPC - Virtual Laboratory Practical Class
  - Students perform experiments
  - 6 practical groups - 40 students in each
  - 3 groups had access to VLPC
  - Mirrors the real experiment experience
  - Time needed to learn how to use the VLC
- Could do potential catastrophic experiments virtually
- As simulations are digital, have the potential for learning analytics with feedback to teacher
- Students can learn not to take shortcuts



ACTION LOGS - FREQUENCIES

- We can also plot the frequency of the various actions



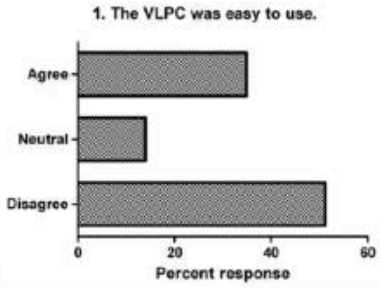
- Referred to the design as analogous to an “on rail” shooter (game environment)

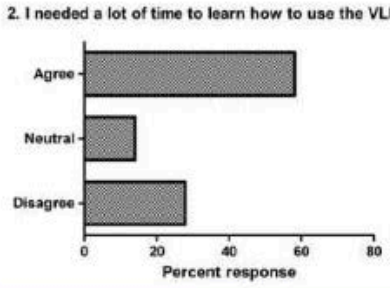
*What was **the impact of these strategies**, what were the key elements that made them successful, and what would have made them more successful?*

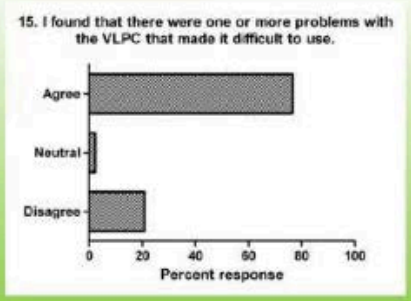
- Increased confidence with real tasks
- Being able to track student use of the VLPC in real time
- Looks like most students were successful - I wonder if this shows they didn’t need practice or whether the scaffolding made the task easier than the real lab task and thus prepared them better for the real lab

FINAL SURVEY

- Use of, and engagement with, the VLPC - **Negative or neutral**

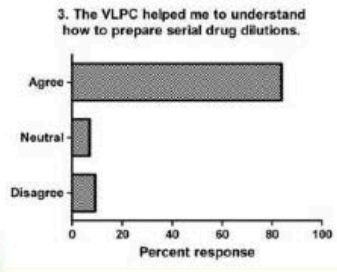


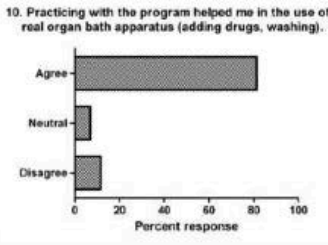


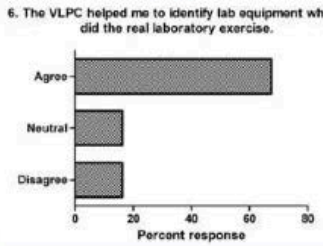


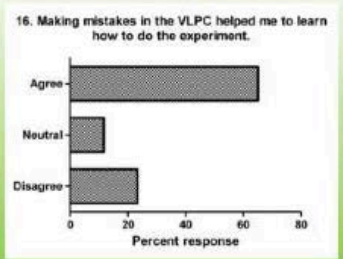
FINAL SURVEY

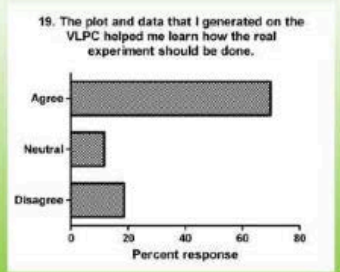
- Student preparation for the real laboratory task: **Positive or extremely positive**





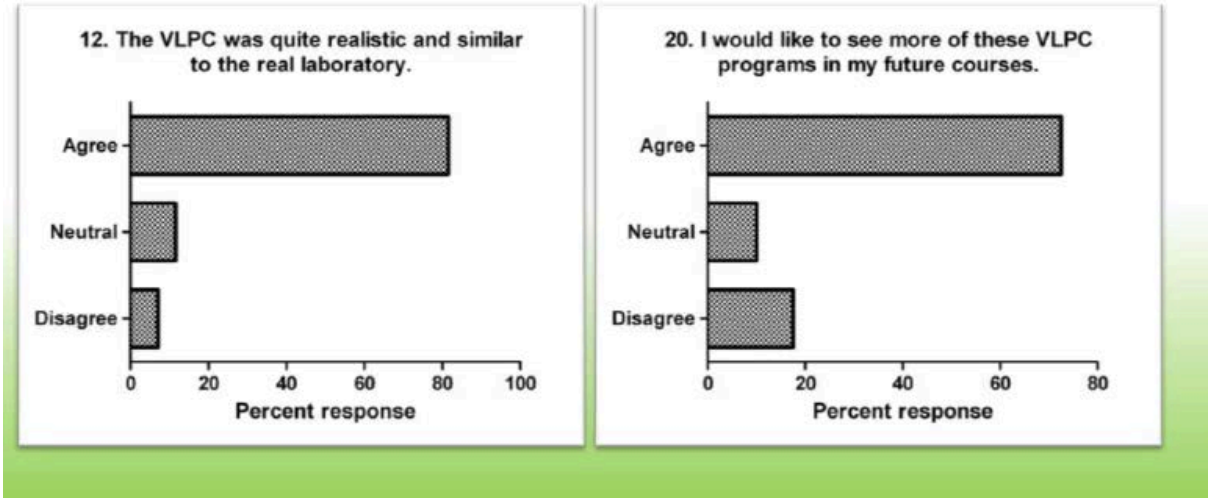






FINAL SURVEY

- Realism and future VLPC modules: **Extremely positive**



- Gamified virtual laboratories - harness the feedback power: students AND academics
  - Student leaderboards, self and vs. other students
  - Unlocking new laboratories

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

- Use of digital data to track student process - showed errors in approach - and differences between pharmacy and science students
- This use of data is really interesting because it would be hard to track these kinds of errors in the real lab in a systematic way
- 'Group effects' (someone taking over) and exploitation of the system a new consideration for virtual settings
- Gamified Vlabs - ideal way to harness the feedback loop, such as leaderboards (self vs. other students) and 'levelling up' to unlock more complex task
- Yes - this could be used at CSU - but cost is prohibitive?
- Professional culture in the two groups of students - sometimes it's good to encourage shortcut-taking - it's part of expert behaviour. But need to be able to address misconceptions and feedback to students impact of decisions
- Virtual laboratory cannot fully replace hands-on experiences, but can provide valuable 'training'
- Compliment to face-to-face teaching not necessarily a replacement

What might the next steps be *or what challenges do you see if we were to adopt these kinds of strategies at CSU?*

- What percentage of students completed the task before the lab? 92% with a 5% credit for completing the task before the real lab
- Orienting students to the technology
- Impact on assessment marks?
- Extra time taken to keep track of student performance in the VLPC in addition to the real lab
- Pharmacy students performing better than science because the task is more authentic to them?
- Wondering about the potential impact of leaderboards - disengage some (been shown in other areas)? Effect on group work? Promote use of shortcuts? Or engage more fully?
- How flexible is the VL? Can it be modified cheaply? Easily?
    - Yes, the 'widgets' like tubes etc do not have to be redesigned and reprogrammed
    - Yes, so equipment can be replaced and develop a suite of experiments

What can medical students learn from role playing in a virtual hospital?

Swee Kin Loke, University of Otago

What were the ***most important ideas****, teaching strategies or technologies presented?*

- Why role play?
    - From passive to active
    - Make-believe - safe
- Why role play in a VIRTUAL world
    - Clinical teaching opportunities
    - Realistic
    - Logistical
- Otago Virtual Hospital
    - Medical students role play in junior doctors in Emergency Department
    - Students can: communicate with patients and fellow doctors, perform 'physical' examinations
- What is the difference between Video and Virtual Role Play?
    - Both learning experiences are valid, but different. A student watching the video of this role play would learn via a vicarious experience; a student role playing in the virtual hospital would learn via an enactive experience (using Bandura's theory of self-efficacy).

*What was **the impact of these strategies**, what were the key elements that made them successful, and what would have made them more successful?*

- Ability to provide peer feedback - digital data collected
- Improved clinical reasoning
- Dispositional aspects

- Clinical reasoning in the virtual world - resembles clinical reasoning in the virtual world!

STUDENTS GET TO "DO THE THINGS"

- 11 medical students participated in Scenario 1
- "What role can this virtual hospital play in your medical education?"
- "Well, you actually do the things here. Whereas in the SECO clinic, you write down or think about what you're going to do, but you don't go and do them."
- (clinical placements) "I certainly wouldn't be the one making the call. I wouldn't want to be the one making the call."

WHAT STUDENTS CAN LEARN

- Students can learn clinical reasoning:
  - Clinical reasoning (VW) corresponds to Clinical reasoning (PW)
- "you actually do the things here":
- Students cannot learn physical aspects of intubating patients
- Student can learn dispositional aspects:
  - When to intubate patient, when to "make the call" (to examine chest, to discharge patient, etc.)

References: Loke, 2015; Loke & Golding, 2016; Perkins et al., 2000

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

- Potential opportunities for inter-professional learning - overcome timetable and geographic constraints
- Can make decisions in virtual environments, whereas not able to do so in paper case studies
- Voice component deliberately left out - use text-speak - so that different scenarios can be emulated without the 'voice' in the way

***What might the next steps be** or what challenges do you see if we were to adopt these kinds of strategies at CSU?*

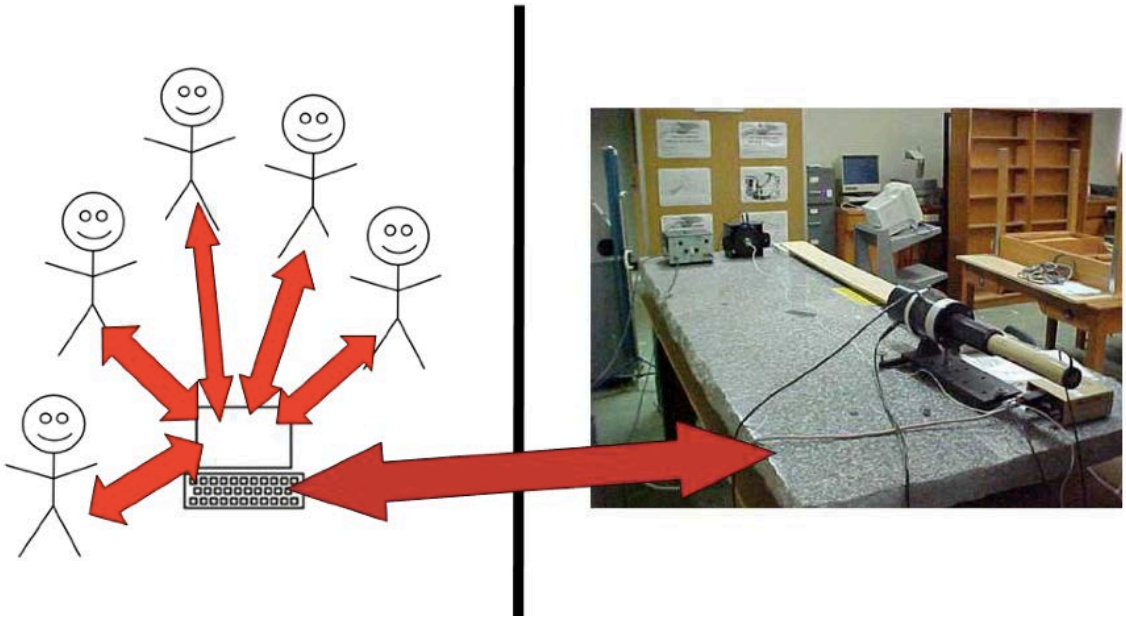
- Access within existing courses/subjects
- Scalability?
  Applicable to Vet Science. Would allow for becoming comfortable with the process. Allows greater access to clinical thinking and reasoning
- Applicable to pre-residential schools (1-4 days for each subject)
- Could use the data collected as part of final assessment - Qs asked, order of examination, key pieces included.
- Data analytics - what is really possible here - individual students? Feed into teacher re-evaluating the subject
- Cost? [Kin] About $10000 for Version 1 in 2010; about $18000 for Version 2 in 2014 (when we employed a Second Life developer to streamline our code, improve stability, and build Holodeck). Phil and I are happy to share the hospital under Creative Commons licence. Just email me at swee.kin.loke@otago.ac.nz

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

Euan Lindsay, CSU Engineering

*What were the **most important ideas**, teaching strategies or technologies presented?*

Remote Labs



Two Necessary Ingredients:

Separation

- Physical separation in remote labs
- Psychological separation in virtual labs

Technology-Mediated Interface

- Usually some kind of computer GUI

- Physical distance not the difference?
- Literature says separation causes changes
- Concept:
  - Establishment reality
  - Maintenance reality
    - Initial use
    - Regular use
    - Expert use
- Need to feel connected to the simulation - competing with their XBox
- Link the mode to learning outcomes:

One Specific Study (Lindsay & Good 2005)

Does the substitution of technology-mediated access for direct, unmediated access lead to differences in the learning outcomes?

How do different access modes affect learning outcomes?

*What was **the impact of these strategies**, what were the key elements that made them successful, and what would have made them more successful?*

- Different access modes lead to significantly different learning experiences!! Choose carefully
- Need to account for the changes that "mode" creates
- Do we need to lie to students? Can we affect better learning experience

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

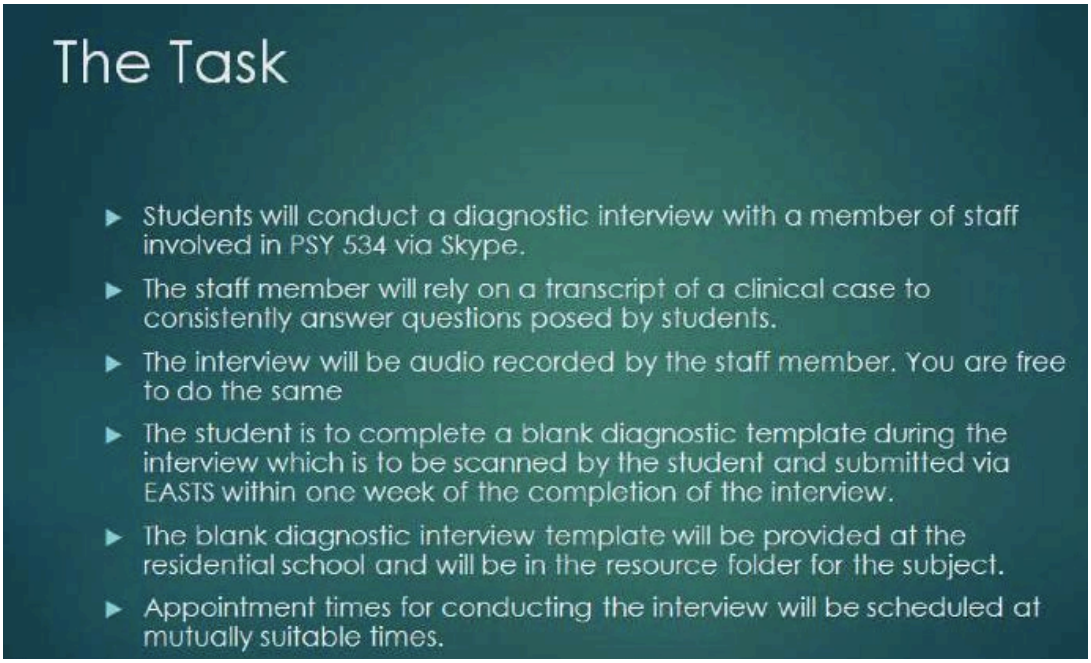
- Are virtual simulations 'generational'?
- Time to adapt to the technology is a factor of whether it is used or not

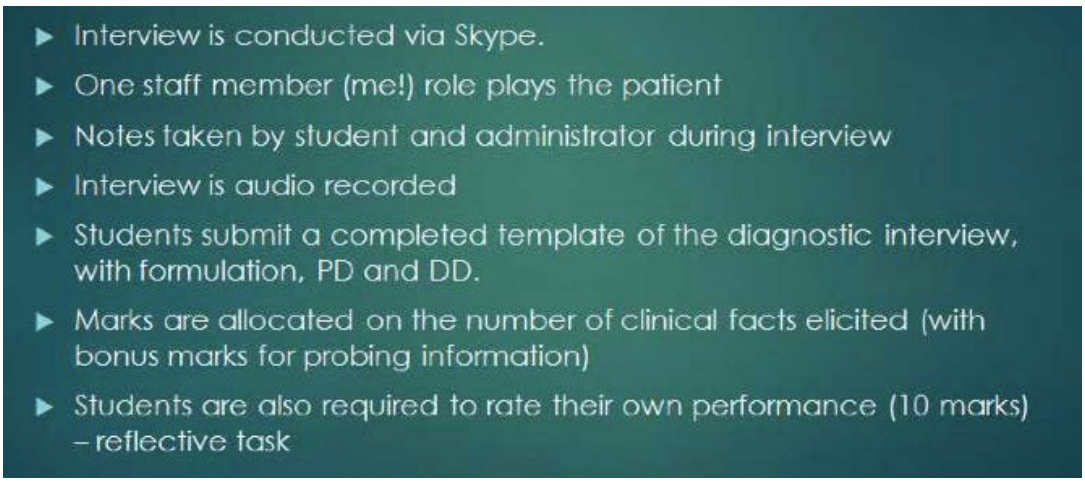
Skype Assessment of Professional Competencies

Rocco Crino, CSU Psychology

*What were the **most important ideas**, teaching strategies or technologies presented?*

- Competency based assessment
- Res schools - not enough time to demonstrate competency





*What was **the impact of these strategies**, what were the key elements that made them successful, and what would have made them more successful?*

- Overwhelmingly positive student feedback
- Students sometimes complain (when the task is described) that it is artificial but then when they do it they forget the artificial aspects.

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

- How does the student receive feedback - in situ (the client giving feedback to the student about how their reactions are making them feel) or after the fact as a reflective discussion?

What might the next steps be *or what challenges do you see if we were to adopt these kinds of strategies at CSU?*

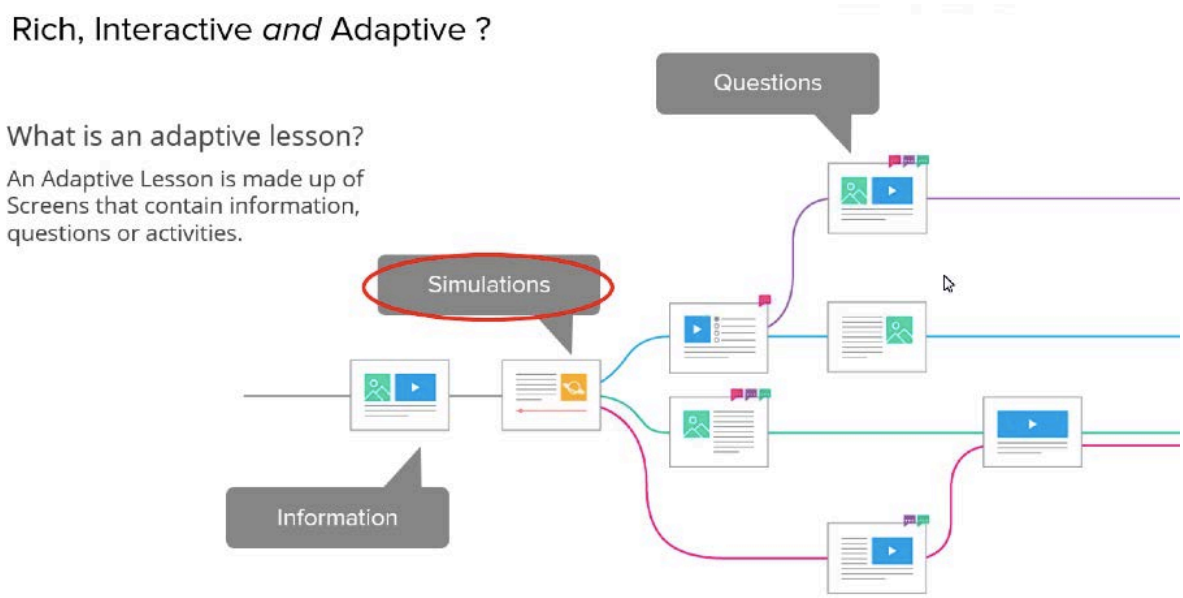
- How much time would this take up if you are Skyping with each student in order to complete the assessment, as well as marking their written work?
    - Also, how many students are involved in this?
- Applicable to the Social Work course
- SW Res schools - could work
- Idea: Use Adobe Connect - 1-1 interview discussion with an audience for feedback and review
    - Or...same idea but with breakout rooms and then group discussion afterwards

Developing interactive and adaptive online resources to enhance student learning

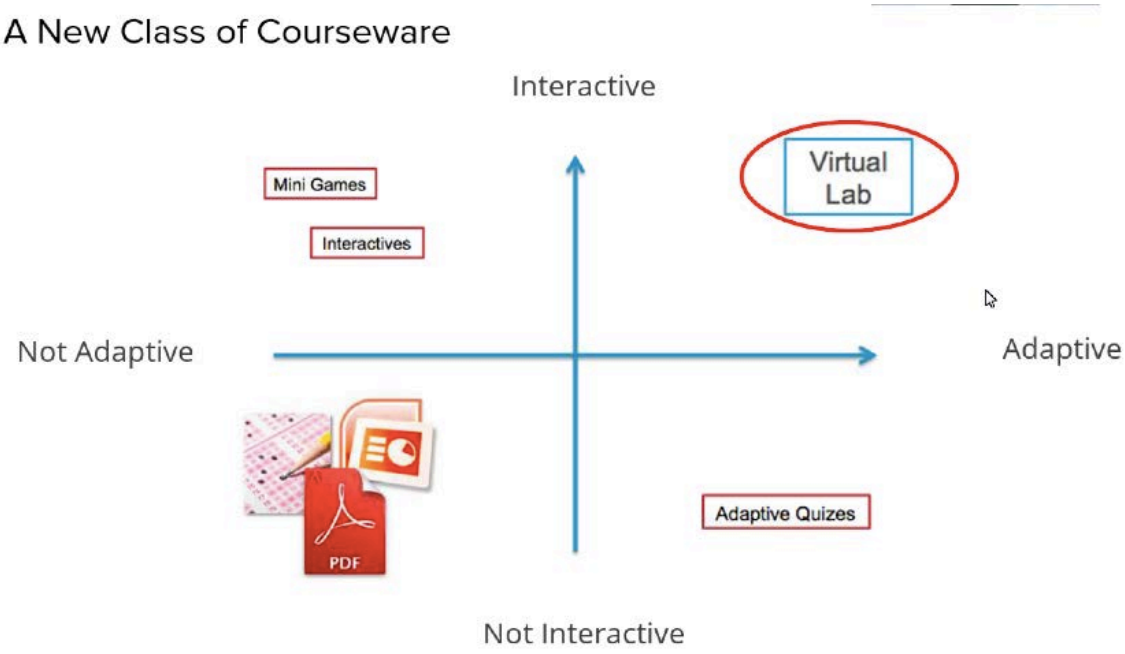
Lucy Webster, CSU Histology and Stuart Canning, Smart Sparrow

What were the ***most important ideas****, teaching strategies or technologies presented?*

- What is an adaptive lesson?



- Promote learning by doing, intelligent and with the teacher in control



- Simulation is nested as an HTML 5 or Flash object with specific interactive capability (not completely open ended like a 3D virtual lab)
- Feedback on the procedural aspects are embedded within the object
- Safety feedback is incorporated too
- BEST - Biomedical Education Skills and Training Network
- Integrates from Interact2

*What was **the impact of these strategies**, what were the key elements that made them successful, and what would have made them more successful?*

- Interesting example of educational publishing using Smart Sparrow
- https://www.smartsparrow.com/case-studies/educational-publishing/
- ADAPTIVE - to the person's behaviour inside the interactive element

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

- Diagnostic discipline that lends itself to this purpose
- Could be a cost effective way for development?

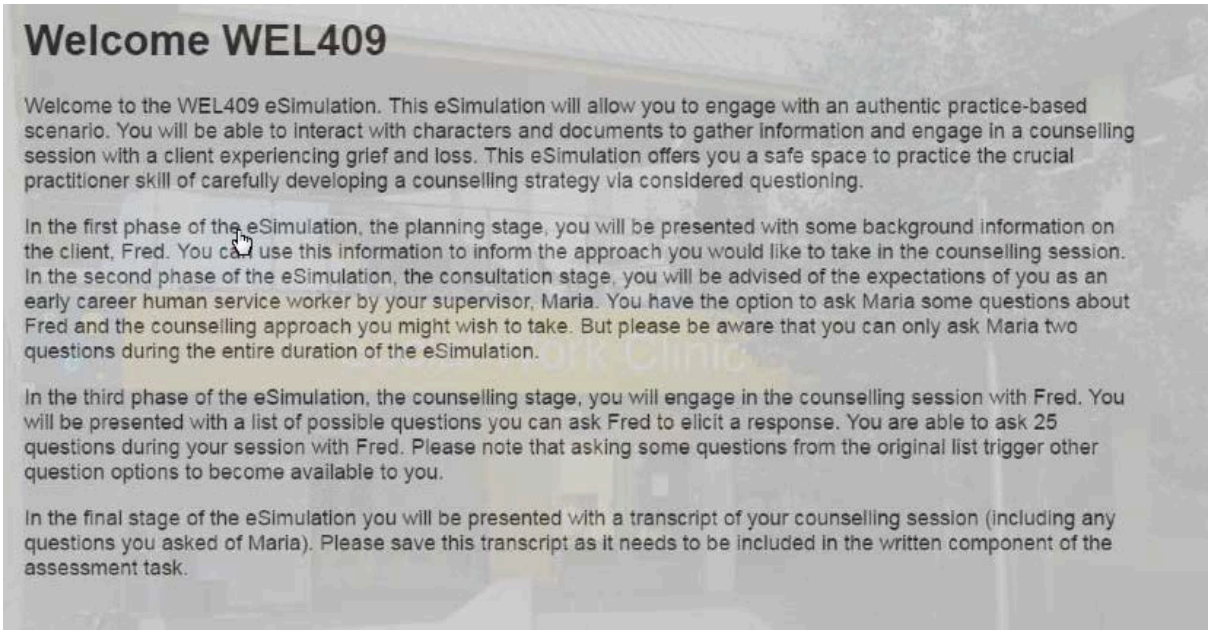
***What might the next steps be** or what challenges do you see if we were to adopt these kinds of strategies at CSU?*

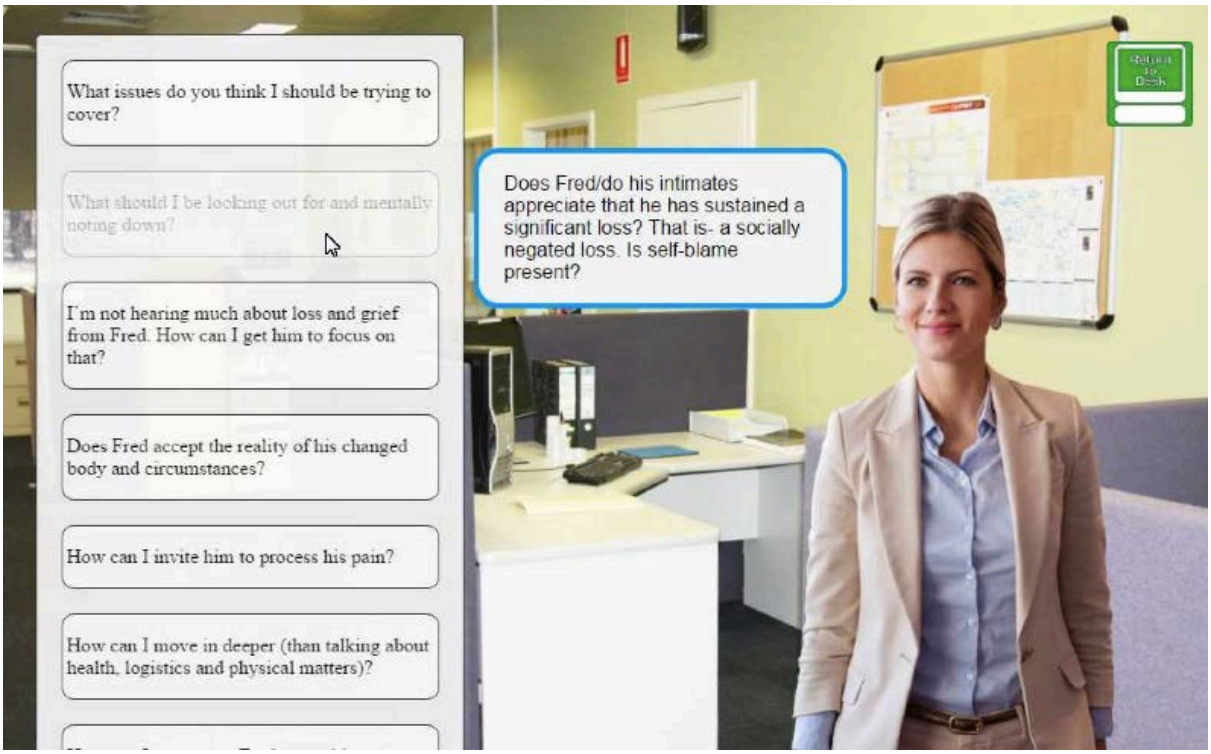
- Applicable across a very wide range of courses, schools and faculties. A CSU enterprise license would be very helpful to push this level of interactive innovation forward.
- Further examples for use at CSU:
    - International students - preparing them for living and studying in Australia. Orientation is complex and important to undertake
    - CSU Global - take cultural preparation unit prior to international experience
    - Student orientation to CSULibrary Services
    - Information Studies - Specialist training for RDA resource description to replace onerous workbooks and need to recreate workbooks. Also allow development of iterative skill development
    - SOTE - scenario preparation for working with student behaviours
    - Technology related subjects - modelling of techniques
    - IKC subjects - engagement in cultural competences

The process of creating an online simulation for 'interviewing skills practise'

Ruth Bailey, CSU Social Work (with Bec Acheson and Ben Atkinson)

*What were the **most important ideas**, teaching strategies or technologies presented?*





- Reflective task afterwards is the key

*What was **the impact of these strategies**, what were the key elements that made them successful, and what would have made them more successful?*

- How long does it take? Are the simulations timed? Timed out?
- Will be implemented in 201660
- How will this be evaluated?
- Another version of a 'flatter' branching scenario: http://www.worldwarfighter.com/hajikamal/activity/

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

- Could this be implemented in Smart Sparrow and this might be an easier way to do this than directly coding?

***What might the next steps be** or what challenges do you see if we were to adopt these kinds of strategies at CSU?*

- Sustainability is important - need to ensure that the questions and/or branching can be tailored by another academic or designer later without necessarily bringing back the technical person - developed in javascript and html
- Limited tailorability…..maybe Smart Sparrow is a better platform
- Could upskill academics to make changes themselves - such as different Qs

Panel on clinical and professional practice simulations

Judith Gullifer (Chair)

*What were the **most important ideas**, teaching strategies or technologies presented?*

- How do you incorporate professional practice?
- It is important to foster deeper critical thinking through simulations
    - Students options to be curious
    - Options to fail

*What was **the impact of these strategies**, what were the key elements that made them successful, and what would have made them more successful?*

- How does CSU reflect and evaluate on practices we have heard today
- We need to provide sensitive case studies for students (safety and privacy)

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

- Time required for these strategies is a key issue … for both resource development and also teaching strategies

***What might the next steps be** or what challenges do you see if we were to adopt these kinds of strategies at CSU?*

- If it can be taught online - don't include it in a residential school
    - Who makes this decision?
    - Is it a financial decision only?
- Use Adobe Connect for debriefing post-res school sessions

Panel on laboratory simulations

Janelle Wheat (Chair)

*What were the **most important ideas**, teaching strategies or technologies presented?*

- Simulations – explore unethical areas, and things that students are not allowed to access normally
- Chair asked what the criteria for including a res school should be – responses included:
    - key applications are laboratory experiments which can't be done in our existing laboratory
    - need to ask where we need embodied experiences
    - reference to research that said early res schools increase retention regardless of the content of the res school
    - begin with assumption that there's no residential school but then come up with a reason why and then unpack the reasons why, the kinds of experience and so where it needs to be
    - There will be different reasons for residential schools at different stages of the degree? First year...community building for later virtual team work (with other reasons)...for later parts of the degree, it will be different…(and depends on the degree)
    - Maybe we need to reconsider the term residential school

***How applicable are the ideas**, strategies or technologies **to the CSU context** and how could you use them in the courses are subjects you are involved in?*

- There is potential for virtual labs that connect theory with practice
- Hands-on approach the biggest drawcard for the res schools

- Students are more likely to engage in pre-lab activities if they are interactive
- Other online learning experience already available - YouTube, Khan Academy, other apps
- Need to define the criteria for having a res school
    - How do we know they are really genuinely required?

What might the next steps be *or what challenges do you see if we were to adopt these kinds of strategies at CSU?*

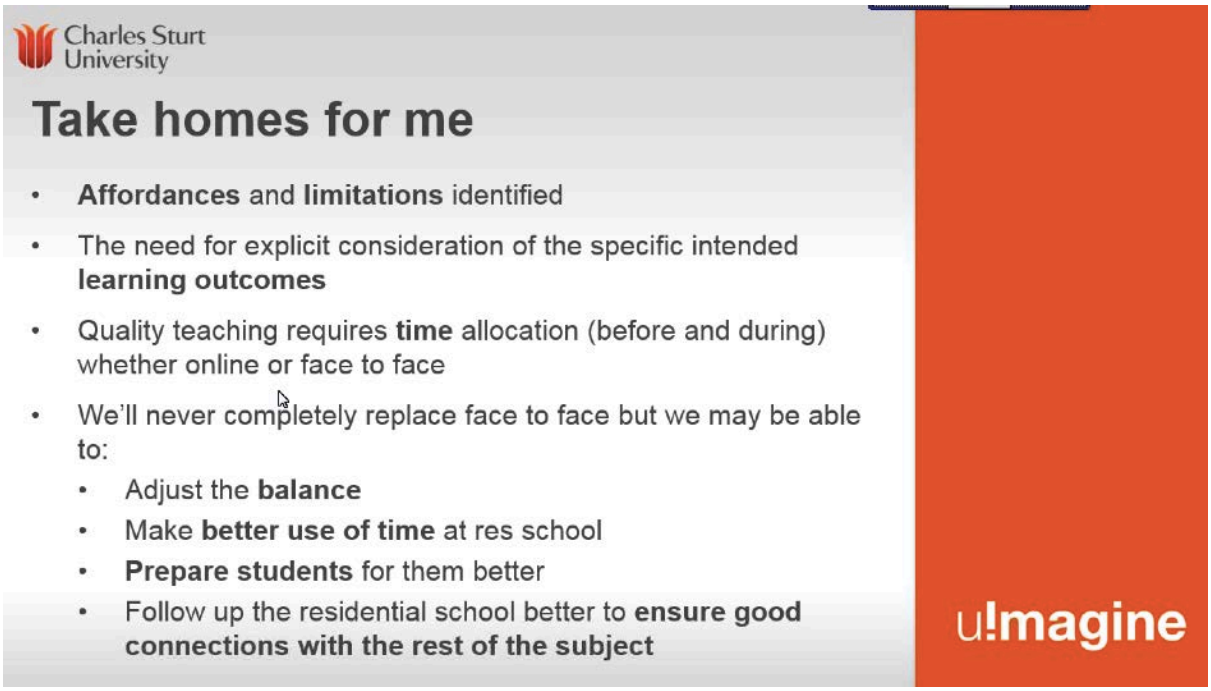
- Encourage course designers and teachers to find online resources that already exist - we do not have to reinvent the wheel all the time
- **Blended res school** - scaffolding people through virtual means beforehand (Sandra comment)
- Examine and evaluate res schools for design, structure and delivery
- Be clear about orientation vs res school
- Do not create expectations that are unrealistic once students come to res school

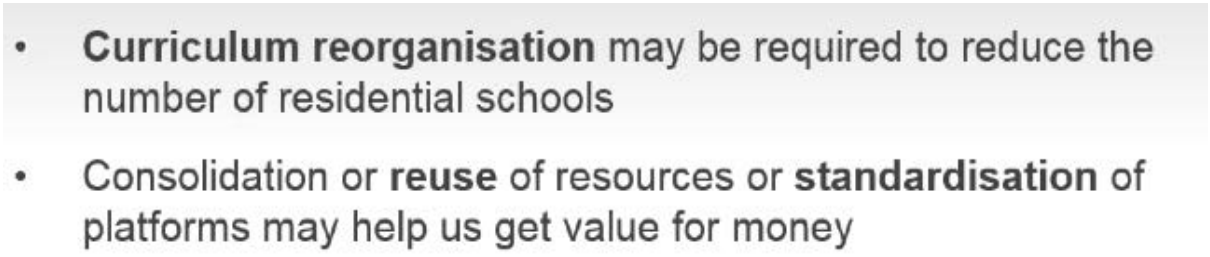
Tim - I wonder if there's a structural problem here - that the choices are limited too limited. "If all you have is a hammer, everything looks like a nail". If all we know about F2F with distance students is ResSchools - then everything is a res school. Same with virtual - if you can do it online then everything's a simulation. Could we utilise different methods to facilitate these types of interactions and experiences? Could we have Conferences for students and link profession and course cohorts? Can we have support organic study groups or help facilitate them?

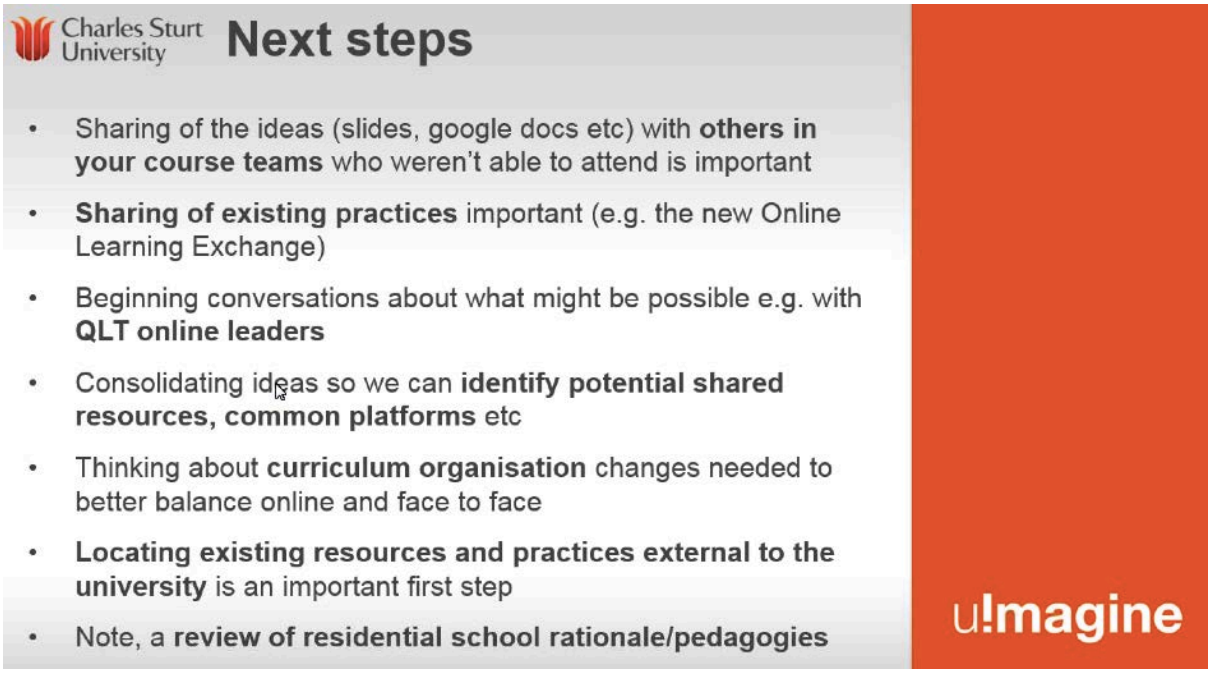
Summary and next steps

Barney Dalgarno

*What were the **most important ideas**, teaching strategies or technologies presented?*







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Destination 2020 - A roadmap for CSU's online future

The power of role-based e-learning - author Sandra wills