Transforming 1st year Anatomy and Physiology into a blended online/inlab practical format

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Background

Anatomy Laboratory at UOW under increasing demands due to increase in undergraduate 1st year Anatomy and Physiology student numbers (nearly doubled in 5 yrs)
Background

High demand for anatomy laboratory space has resulted in:

• Reduction in available revision times in anatomy laboratory for undergraduate students
• Restructuring of 1st year Anatomy and Physiology Subjects
• Previously:
  • MEDI111 – Introduction to Anatomy and Physiology I (590 students)
  • MEDI100 – Human Structure and Function (70 students)
• In 2017:
  • MEDI111 – Access to Anatomy & Physiology Laboratories (280 students)
  • MEDI100 – Access ONLY to Physiology Laboratory (400 students)
Restructured timetable

Students enrolled into either:

- Stream A practicals
- Stream B practicals
- Alternating between inlab and online practicals
- Online practicals had associated assessment tasks
Inlab practicals

Inlab practicals involved:

- Anatomy model revision
- Physiology activities
- Mnemonics whiteboard
- Practice quiz in revision prac
Online practicals

Online practicals involved:

• Lecture note revision
• PhysioEx activities
• Animations
• Prac manual activities
• Anatomy glossary
• Practice quiz based on Subject Outline
• Moodle quiz (4% of assessment, 5 x quizzes = 20% total)
Online study tools

Virtual Anatomy Laboratory
What worked well in this format?

- Students enjoyed the **flexibility** of doing the online assessment tasks in their own time
- More **opportunity to attend a make up practical class** if students are unwell due to same topic running for a fortnight
- **Consolidation of knowledge** through the design of linked lecture and laboratory related online assessment tasks
- Inclusion of animations and simulations provided a **variety of ways to learn**
- **~4% lower failure rate** than the previous years cohort
What didn’t work well in this format?

• Only 260 out of 400 students purchased access to mastering A&P platform
• Online assessments open for 7 days (closed 10pm Sundays) however Pearson support only available Mon-Fri
• Virtual Anatomy Laboratory under-utilised and not as user friendly as it could be
• Some students did feel the need for more lab time
• Tutorials only ran on Fridays, more flexibility/different days would be better
What improvements could be made?

• Changing opening times for online assessments to Mon-Fri
• More laboratory time
• Virtual access to cadaveric material customised to relevant subject content
• More consolidation/recognition activities to assist with learning a large amount of content
Virtual access to cadaveric material

Microsoft HoloLens?

- Augmented reality
- Livestreaming to multiple venues
- Multimedia resource building for online study tools
Virtual access to cadaveric material

Microsoft HoloLens trialled in MEDI112 in 2017 (Spring session Anatomy and Physiology subject)

- 500 students enrolled in subject, 186 students completed survey (36%)
- 7 point Likert scale assess enjoyment, learning benefit and engagement
- Free text field available to justify Likert scale choice and add extra comments
Preliminary results of HoloLens Trial

- 70% of respondents answered that they enjoyed (either somewhat, agreed or strongly agreed) viewing the HoloLens
- 67% answered that it helped them to learn
- 66% answered that it helped them be more engaged in their learning
- Removed issues surrounding overcrowding around demonstrators
- All structures viewed by students from the same angle
- Potential for development of online resources (Virtual lab, Moodle activities)
- Improvements suggested by students centered around practical issues such as lighting, steadiness and user practice
Where to now?

- Faculty is investigating anatomy software providers – institutional licence
- Nursing re-instating Anatomy and Physiology content 2019
- Continuing to update Virtual anatomy laboratory. HTML5 upgrade for compatibility with more devices
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Our global presence