

## 1: Keynote

# Artificial intelligence and the future of education

Associate Professor Chinthaka Balasooriya

Director of Medical Education Development, School of Public Health & Community Medicine

### Synopsis

The fourth industrial revolution (4IR) is rapidly changing the way humans live, work and learn. Transitions forecast by the Horizon Report 2019, The Topol Review 2019 and the World Economic Forum are already impacting on our lives. In this rapidly changing environment, how do we chart a meaningful way forward for education? How do we make sense of all the options available and make decisions that will truly enhance education? How do we deal with the overarching uncertainty related to a technology that some assume could replace humans? How do we retain essential humanistic elements within this emerging technology-driven world? These are critical questions that deserve our urgent attention. Change is inevitable and the only choice is whether we wish to play a role in shaping this change.

In this keynote, I will draw attention to some of the key trends forecast by some leading reports on this topic. I will then propose an idea to illustrate how we can meaningfully harness the power of technology to truly enhance the quality of medical education and medical practice. This idea relates to the creation of a Virtual Personalised Learning Companion (VPLC), which would combine the power of newer technologies with essential humanistic elements. I will propose a key principle to guide our way forward: that our new world should be shaped by carefully crafted human-technology partnerships, rather than by dominance of one over the other.

The keynote is intended to generate discussion and debate on big-picture issues such as the meaning of human-learning within an era of machine-learning, the changing role of medical practice and the need to re-define the role of medical schools within this new environment. Could medical schools move to a model that trains Human-VPLC Duos that learn and work in harmony and graduate together and enter the health workforce together? Could this be the win-win solution that combines humanistic elements with the power of new technology? Do we dare to imagine a new world where this might be a reality, and are we willing to lead the discussion on how to get there?

**2: Keynote**

**Anatomy: Quo Vadis?**

**Professor Nalini Pather**

**Head, Department of Anatomy, School of Medical Sciences**

**Synopsis**

Anatomy has long been regarded as fundamental to medicine. Students, practicing physicians, and patients usually place high value on the importance of anatomy to medical practice. Yet there remains considerable controversy on the place and significance of anatomy in medical programs. As one of the longest standing disciplines, questions periodically arise on whether it is becoming ‘fossilised’ or is on the brink of a renaissance. What does the future hold for the discipline, and how does it advance medical practice? What are the likely future innovations and its implications for medical students, postgraduate trainees, and the future of healthcare?

It is a well-accepted truism that the anatomy taught should be clinically relevant; but as a discipline, anatomy offers a much more richer education experience. Anatomy extends beyond names, labels and descriptions. It is a discipline that engages the learner in self-discovery and grapples with deep and important ontological questions –elements essential to the ‘good doctor’ (Cooke et al., 2010). It provides one of the earliest opportunities for future doctors to be guided by humanism, which as Pinker (2018) posits, is essential if modern science and medicine is to be relevant in the 21<sup>st</sup> century and beyond. Anatomy, however, is also a discipline that is uniquely bound to almost every other medical discipline positioning it as a unique nexus to advance technological innovations that will profoundly change medical practice.

This keynote will explore new approaches to clinical anatomy education such as evidence-based anatomy, comfort with ambiguity, just-in-time learning, and the integration of next-gen technologies such as emerging imaging techniques, mixed reality and artificial intelligence, robotics, and bioprinting. The future of the discipline is assured if its context in medical education is focussed on advancing the concept of the ‘good’ doctor and ‘good health’ in the evolving landscape of technological innovation in healthcare.

**3: Keynote**

**What is our future? Medical education in the digital age!**

**A/Prof Adrienne Torda**

**Associate Dean of Education & Innovation, Office of Medical Education, UNSW Medicine**

**Synopsis**

Over the next few decades, healthcare will change dramatically. Many of the functions currently performed by doctors will be taken on by technology. This will include digital platforms on smartphones, wearable devices and artificial intelligence interfaces with healthcare agencies. Already robotics and diagnostic algorithms assist in surgery, radiology and primary care, just to name a few areas. There will be complex areas of medicine however, where humans continue to perform better than technologies, particularly those that require empathy, trust and negotiation.

The healthcare models will be quite different, as data enabled technology and patients become partners in healthcare journeys and doctors really need to learn to work well in inter-professional teams. As the population ages, the demand for preventative outpatient medicine and support, will need to develop immensely. Genomics and big data will allow personalised medicine to commence even before birth.

This changing landscape obviously requires us to change what and how we are teaching our students. We already have some simple principles to guide our new educational strategy built around these emerging needs. The implementation process, however, is likely to be challenging.

We will need to use technology in a way which enables world-class education. We need to equip our students with the skills that will become more important in future doctors, such as critical, adaptive, and reflective learning, as well as helping them to improve self-care to avoid burnout. We will also need to engage faculty to embrace change, develop new skills and new approaches to educational delivery.

**Presentations:**

## **4: Development of the Virtual Reality pedagogy for Anatomy classroom**

**Dr Michelle Moscova<sup>1</sup> and Dr Irena Dedova<sup>1</sup>**

<sup>1</sup>Anatomy Department, School of Medical Sciences

**Background:**

Immersive virtual reality (IVR) is a new teaching tool. While students enjoy using IVR, there is limited evidence on how IVR should be integrated with traditional cadaveric laboratory-based anatomy teaching methods.

**Summary of work:**

This study used action research to develop a pedagogical method for integrating IVR into anatomy classroom during a 14-hour 2017 and 2018 Pre-medicine program. Classes included different sequences and combinations of activities, including IVR (Organon 3D application for HTC Vive), practical activities in a cadaveric laboratory and problem solving activities. Student experience was evaluated using a survey containing a combination of 5-point Likert scale questions (5= Strongly Agree; 1= Strongly Disagree) and free responses. Student formative tasks were evaluated for level of cognitive engagement using Blooms taxonomy. Correlation between final examination grades and student's survey responses was assessed using Spearman's rho.

**Summary of results:**

All students agreed that they were satisfied with the overall teaching of anatomy (mean of  $4.9 \pm 0.3$ ). Average final anatomy examination grade was 68% in 2017 and 80% in 2018. At least 90% of students agreed that using cadavers improved their understanding of anatomy, ability to solve clinical problems, remember the names of anatomical structures and understanding of spatial relationship between structures. In 2018, 100% of students agreed that using IVR improved their understanding of anatomy, remember the names of anatomical structures, problem solving ability and understanding of spatial relationship. Cadavers, IVR and staff were consistently named as most valuable resources in the course. There was no correlation between students' final anatomy grades and their overall course experience or preference in using IVR or cadavers for learning anatomy. Informed by the experiential learning theory, effective sequence of combining IVR with cadavers was developed.

**Discussion and conclusions:**

While students' experience and overall grades in a combined IVR and cadaveric anatomy course were very positive, there was no correlation between the two. Use of traditional cadaveric laboratory in combination with IVR was effective for teaching anatomy in our course.

## 5: Assessment for deep learning: Developing team-based learning assessment and feedback practices to support student learning and development.

Dr Irina Dedova<sup>1</sup> and Dr Michelle Moscova<sup>1</sup>

<sup>1</sup>Department of Anatomy, School of Medical Sciences

Authentic assessment is vital not only as a measure of student's discipline competence but, most importantly, is as a potent driver of learning (Glasson, 2009). Good assessment and feedback practices engage students in meaningful learning activities that promote motivation and self-regulation of learning (Biggs, 2011; Ramsden, 2003). Students often find anatomy assessment difficult, as it is perceived to primarily focus on memorising content that seems irrelevant to their chosen occupations. Curriculum and assessment design with the focus on discipline-specific anatomy application strongly relates to mastering deep understanding of anatomy, leading to higher learner achievement (Terrell, 2006).

The ANAT3131 (Head, Neck and Back Anatomy) course and assessment were modified in 2018 to address high failure rates and poorly perceived assessment. In 2017, 20% of students disagreed that the amount of assessment was appropriate, and 13% disagreed that assessments were appropriate/relevant. This was particularly true of group assessments. To address this, Michaelsen's model of Team-Based Learning (TBL) pedagogy was selected to inform course re-design and delivery (Michaelsen, Davidson, & Major, 2014). We have developed series of TBL modules that were carefully scaffolded to engage learners in assessing their own progress and developing team skills and discipline skills concurrently, in line with graduate capabilities and professional expectations. The core principles employed included: carefully formed permanent teams; accountability of students for quality of individual and team work; frequent and timely feedback; and assessment promoting both learning and team skills development (Michaelsen, Davidson, & Major, 2014).

Following this re-development, failure rates have decreased from 10% in 2017 to 3.3% in 2019. According to MyExperience survey, student satisfaction and engagement with assessment in this course has improved:

*"The TBL project was interesting because it encouraged teamwork and discussions that challenge our minds"*

*"The team quizzes and the chance to rebut wrong answers provoked thought and stimulated team discussions."*

*"Assessments were fair and personally I gained a lot of knowledge from the course even though it is not easy. One of the anatomy courses that I learned the most."*

In 2018/19, 100% of students perceived assessment as being relevant and appropriate. Therefore, introducing TBL principles to the ANAT3131 assessment design has facilitated a positive change by shifting the focus from the teacher/content-centred to the student-focused approach. By considering the learners perspective, the assessment and feedback design moved beyond simply covering discipline content to engaging and motivating students and foster deep applied knowledge acquisition.

## 6: From idea to online: Ensuring your learning concept is realised and beneficial

Andrew Lovell-Simons

### Medicine Education Development Unit

Examples of good practice in educational development will demonstrate and illustrate the importance of:

- maximising available expertise and resources
- ensuring your developed resource will maintain relevance
- understanding the student perspective
- focusing on concepts not content
- concentrating on communication not media.

Following these guidelines when working with developers and media specialists, should result in your resource:

- being available on time
- aligning with the requirements of the course
- meeting the student's needs
- being easily modified and maintained and accessible to the widest possible audience.

If you have an idea for a course or learning resource to be developed for the Medical Faculty, by the Medicine Education Development Unit - MEDU, this presentation will outline the planning process, the effort needed, the roles and responsibilities and expectations you can have.

## 7: Student-ratings in clinical teaching: Devising a new questionnaire based on meta-analysis

Dr Pin-Hsiang Huang<sup>1</sup>, Professor Anthony O'Sullivan<sup>2</sup>, Professor Boaz Shulruf<sup>1</sup>

<sup>1</sup>Office of Medical Education, <sup>2</sup>St George & Sutherland Clinical School

### Background

Numerous teaching factors are introduced in current clinical teaching measurements. However, the measurements do not comprehensively cover relevant teaching factors. This study aims to devise a reliable and valid measurement for clinical students to report the perceived teaching practices.

### Methods

The new tool was devised based on a meta-analysis encompassing effective clinical teaching-learning factors. An item pool was generated and reduced from 202 to 79 items through discussions with scale experts, medical educators and students. Frequency scales from never to always were applied. The newly devised tool, Student Ratings in Clinical Teaching (STRICT), was implemented to UNSW year 2, 3 and 6 medical students.

### Results

Among 834 medical students, 352 (44.2%) completed the questionnaire. The exploratory factor analysis identified Student-Centred Learning, Problem-Based Learning, Self-Directed Learning, and Visual Technology. The reliability was acceptable (.77 to .89). The subsequent confirmatory factor analysis showed that former three factors were highly correlated to each other (.72 to .77).

### Conclusion

STRICT is a valid and reliable tool which demonstrates how students perceive clinical teaching efficacy. Apart from Visual Technology, the highly correlated factors can converge into "student active learning". Clinical teachers may adapt their teaching with more student active learning activities and visual technology.

## 8: Development of a Tool for Assessing Pharmacists' Professional Behaviours

Huda Dubai<sup>1</sup>, Dr Barbara-Ann Adelstein<sup>2</sup>, Dr Silas Taylor<sup>1</sup>, Professor Boaz Shulruf<sup>1</sup>

<sup>1</sup>Office of Medical Education, <sup>2</sup>Prince of Wales Clinical School

### **Background:**

Professional behaviour is crucial in everyday practice as pharmacists are expected to demonstrate qualities in dealing with patients. Quality measurement of such behaviours is essential to assess any behavioural improvement. Previous instruments focus on measuring elements of professional behaviour among students, rather than pharmacists. It is crucial to develop and validate a tool for measuring pharmacists' professional performance in the workplace.

### **Objective:**

The objective of this study was to develop and validate an instrument to measure professional behaviours among practising pharmacists working in community pharmacies.

### **Method:**

An expert panel reviewed a list of items extracted from previously published tools and via an iterative process reached an agreement, with appropriate adjustments. The instrument was pretested for refinement and then applied to community pharmacies in Sydney. Exploratory Factor Analysis was used to identify the underlying factors of the Pharmacists Professional Behaviours Scale of Self-report (PPBS-S) followed by Confirmatory Factor Analysis to estimate the model construct and fit.

### **Results:**

For the PPBS – S, a clear factors structure was identified, related to four factors: “interaction”, “content of communication”, “establishing professional status” and “process of communication”, confirmed with permissible fit to the data (CFI = 0.914, TLI = 0.889, and RMSEA = 0.076). Composite reliability for the four extracted factors were F1 = 0.71, F2 = 0.798, F3 = 0.701, and F4 = 0.775.

### **Conclusion:**

The PPBS- S was developed for measuring pharmacist's performance at the workplace rather than students, it shows acceptable validity and reliability.



## 9: Crossing the threshold to expertise: Conceptual learning for clinical practice

Dr Rachel Thompson

Office of Medical Education

### Background:

Over the years since the Sicily Statement was published (Dawes et al, 2005) teachers of evidence-based practice (EBP) have discussed and published that their students find learning this practice difficult. Over nearly the same period of time, the explanatory Threshold Concept Framework (Meyer and Land, 2003) has demonstrated that transformative conceptual learning is key to gaining disciplinary knowledge and expertise but can be troublesome for students. Consequently, this framework has been developed and used successfully to improve student outcomes by identifying and targeting these troublesome transformative concepts with pedagogical support.

### Aims & Method:

This doctoral research took a qualitative, constructivist approach using Vygotskian theory combined with the Threshold Concept Framework. An abductive method was used to investigate how critical thinking acts for conceptual learning of evidence-based practice and biostatistics in an Australian undergraduate medicine program.

### Results:

The main finding was that assimilation of key overarching concepts initiates a core transformation of knowledge and disciplinary perspectives, leading to new ways of thinking and practising with augmented clinical expertise. Language and critical thinking both assist in this; language acts as the central cognitive bridge that initiates and enables critical thinking for transformative conceptual learning. Dialogue with experts and peers was important for student learning, but self-teaching, as inner speech, was significant in exploiting crucial critical thinking steps that unlock transformation.

### Conclusions:

It is proposed that specific critical thinking steps can be harnessed to ensure that students reach their full potential in learning these threshold concepts for application as clinical practitioners. A revised model of the 5-steps of EBP is presented that incorporates the main threshold concepts identified by this research, and emphasises the transformed ways of thinking and practising that our students should be supported to aspire to.

## 10: Factors to consider in the instructional design of virtual learning resources for anatomy education

Nicolette. S. Birbara<sup>1</sup> and Prof Nalini Pather<sup>1</sup>

<sup>1</sup>School of Medical Sciences

### Background:

With the increasing use of virtual learning resources (VLRs) for anatomy education, it is important that their design promotes effective learning. This study aimed to investigate factors that should be considered in VLR design such as delivery modality, physical fidelity and prior knowledge and university experience.

### Materials and Methods:

VLRs were developed for multiple delivery modalities and for different anatomical topics (e.g. skull, heart and liver anatomy). Participants were voluntarily recruited to trial the VLRs and provide feedback through completing a perceptions survey. Learning outcomes were measured through pre- and post-tests.

### Results:

Analysis of the survey and test data indicated that delivery modality is a significant factor, with desktop delivery reducing the physical discomfort, disorientation and mental effort associated with immersive modalities. User control was also perceived as an important factor, provided that the interface is familiar. For synchronous collaborative use, an interface that supports natural gestures can facilitate communication. Interestingly, VLR design needs to consider students' level of prior knowledge, as this has significant impact on learning. When there is minimal prior knowledge attained, high fidelity VLRs appear to facilitate knowledge improvement due to associations with traditional learning experiences. Overall, the data demonstrate that VLRs are more effective when prior knowledge has been attained as novice learners are distracted from learning by the novelty of the experience.

### Conclusion:

If VLR design is to optimise learning, the principles of design potentially differ from game design in that they should be student and learning centred.

## 11: Innovative design and delivery in online postgraduate courses: Providing an equivalent learning experience

**Dr Sally Nathan<sup>1</sup> and Armida Pobre<sup>2</sup>**

**<sup>1</sup>School of Public Health & Community Medicine, <sup>2</sup>Medical Education Development and Unit**

This presentation will focus on two elective courses in the postgraduate programs in the School of Public Health and Community Medicine: Qualitative Research Methods (QRM) and Community Development (CD). These courses were designed for full online delivery in 2015 with a range of new digital tools adopted and trialled in Moodle over the past four years. Both courses are focussed on skills development, such as interviewing in qualitative research and assessment of community needs, assets and dynamics in community development. This focus on skills versus content required innovation in approaches to fostering student dialogue and feedback and approaches online that enable students to practice core skills in a community of learners. Course improvements and re-design in recent years, particularly in 2019 for the Trimesters, focussed on ensuring online group activities in Moodle consolidated and expanded on individual learning and skills development required for the final assessments. Improvement in student satisfaction scores has occurred after responding to feedback in a continuous improvement process. The online tools used together in the two courses, including wikis, discussion forums, focussed online assessable activities, scenarios, video materials, virtual meeting rooms and webinars will be presented including how student feedback was addressed.

## 12: Fostering critical reflective practice for health leadership practice

Dr Lois Meyer

School of Public Health and Community Medicine

Strong management and leadership are critical to health care performance within the highly dynamic and complex settings of local and international health systems. Central to ensuring health leaders have the capacities to cope within the shifting and demanding contexts within which they need to function effectively are the abilities to critically reflect on their own practice and learn the implications for themselves and those they manage in their health service. The need to be critically reflective is embedded within the Australian Health LEADS Capability Framework yet there has been a paucity of discussion and research on pedagogical approaches to systematically foster critical reflection within health leadership postgraduate education.

This presentation outlines an innovative approach to fostering students' critical reflection implemented and refined over the last four years within *Health Leadership and Workforce Management*, a core course in the Master of Health Management. Embedded within this postgraduate course students undertake a series of self-assessment instruments at the commencement and completion of the course and reflect on the implications for their own health leadership capabilities. The presentation discusses how I have redesigned the learning and assessment task iteratively over the four years to seek to enhance how students engage in reflexivity on the implications of leadership at both at an individual and organisational level and the positive outcomes and future research of this work.

## Poster Abstracts

*Posters will be displayed in the Kirby Institute foyer area*

### Poster:

## Super supervisors: What makes a good research supervisor

Barbara-Ann Adelstein<sup>1</sup>, Natacha Carragher<sup>1</sup>, Boaz Shulfruf<sup>1</sup>

<sup>1</sup>UNSW Medicine, Sydney, Australia

Accepted and displayed at ANZAHPE 2019.

### Introduction/background:

The quality of research supervision is integral to students' learning and satisfaction when undertaking research. Factors that influence this are not well substantiated.

### Aim:

To assess factors that predict supervisor recommendations by research students.

### Methods:

Data were drawn from 212 students enrolled in the fourth year (in which students undertook a research project under the guidance of a supervisor) of a six-year undergraduate Medicine program at UNSW, Sydney, Australia. A multivariate logistic regression analysis was performed to identify factors associated with whether a student would recommend their supervisor to future students (taken as a proxy for students' satisfaction with their supervision). Factors assessed included frequency and type of meetings (one-on-one/team), statistical/methodological support provided by the supervisor, and number of hours the student spent on the project.

### Results:

The majority of students indicated that they would recommend their supervisor (n=122, 57.5%). Fifty-one percent of students met with their supervisor weekly. The more supportive a supervisor was considered to be, the more students would recommend them; however, 23% of students who assessed their supervisor as supportive would not recommend them. Controlling for all predictor variables, students who had weekly one-to-one meetings with their supervisor were more likely to recommend their supervisor to future students, compared to students who had less regular meetings (Wald 25.6 p<0.001).

### Discussion:

Good research supervision is complex. While supportive supervisors are valued, other factors play an important part.

### Conclusions:

Weekly one-on-one meetings between students and research supervisors was a significant factor for recommending a supervisor.

**Poster:**

## **Real or not real – the impact of physical fidelity on learning anatomy in an interactive labelling task**

Nicolette S. Birbara<sup>1</sup>, Nalini Pather<sup>1</sup>

<sup>1</sup>Anatomy, School of Medical Sciences

Accepted and displayed at ANZAHPE 2019.

**Background:**

Technological advancements have made it possible to create realistic virtual representations of the real world. It is, however, unclear in medical education whether high physical fidelity is required in virtual learning resources (VLRs).

**Aim/objectives:**

This study aimed to compare high fidelity (HF) and low fidelity (LF) VLRs for learning anatomy.

**Methods:**

HF and LF interactive labelling VLRs were developed for liver anatomy. Participants from cohorts with and without prior anatomy knowledge were recruited to compare the VLRs. Labelling task score and completion time were recorded, knowledge acquisition was measured through pre and post-tests and participants' perceptions were surveyed.

**Results:**

A total of 333 participants took part in this study. There was no significant difference in knowledge acquisition between the VLRs overall ( $p = 0.767$ ). Task score was significantly higher overall ( $p = 0.017$ ) and completion time was shorter within both cohorts for the LF VLR, the latter being significant for the cohort without prior anatomy knowledge ( $p = 0.001$ ). The percentage of new knowledge retained was higher overall for the HF VLR ( $p = 0.214$ ). The LF VLR scored more highly in the perceptions survey regarding understanding, revision, aesthetics and quality, with the first being significant for the cohort without prior anatomy knowledge ( $p = 0.027$ ).

**Discussion:**

Level of prior knowledge may be an important factor when considering the physical fidelity of anatomy VLRs.

**Conclusions:**

This study suggests that high physical fidelity is not necessarily required for anatomy VLRs, although may potentially be valuable for retaining new knowledge.

**Poster:**

## **Paediatric regional anaesthesia: a two-year retrospective analysis of procedures, techniques and clinician expertise**

S. Byun<sup>1</sup>, D. Sandeman<sup>2</sup>, B. Shulruf<sup>3</sup>, N. Pather<sup>1</sup>

<sup>1</sup>Department of Anatomy, School of Medical Sciences, UNSW Medicine, <sup>2</sup>Department of Anaesthesia, Sydney Children's Hospital Randwick, Sydney, <sup>3</sup>Office of Medical Education, UNSW Medicine

Accepted and displayed at ANZACA 2019.

### **Introduction:**

Paediatric regional anaesthesia has become prevalent and effective in the management of peri- and postoperative pain in children. Technical and training guidelines however require review, to continue to provide the most reliable anaesthetic procedures applicable to the range of ages in the paediatric population. This study aimed to assess the prevalence and effectiveness (outcome) of a paediatric regional anaesthetic practice over a period of two years at one hospital site, and the impact of clinician experience.

### **Materials and Methods:**

A total of 3,789 cases (2015-16) were selected from a medical record database of a Sydney's Children Hospital (LNR/16/SCHN/387). Information on patient demographics, operative and recovery data and the level of clinician expertise were analysed for frequency and significant relationships.

### **Results:**

Twenty types of regional blocks were reported (17% of 3,789). The majority of procedures were performed in the head and neck region (43% of 3,789) however, regional blocks of the trunks were related to longer duration of procedure and recovery. Younger patients required longer time to both induce ( $36.6 \pm 22.1$  mins), and recover from ( $76.5 \pm 61.8$  mins), anaesthesia. Of the 3,789 case reports analysed, only 212 included details on the techniques used (e.g. ultrasound-guided or landmark palpation-based). Of note, only 22 recorded reasons for complications. The outcome of regional anaesthesia negatively correlated with clinical experience level of anaesthetists ( $p < 0.05$ ).

### **Conclusion:**

The absence of detailed notes in the medical reports and the significant negative correlation between outcome and clinical expertise suggest a need for improved technical and training guidelines for a more reliable anaesthesia in children and infants.

Poster:

## **Perspectives of student collaborators and university academics in curriculum development**

Jarett Pereira<sup>1</sup>, John Vassil<sup>2</sup>, and Rachel Thompson<sup>3</sup>.

<sup>1</sup>Medicial Student, UNSW Medicine, <sup>2</sup>UNSW Medicine Graduate 2019, <sup>3</sup>Office of Medical Education

Accepted and displayed at the UNSW Students as Partners Symposium, 2<sup>nd</sup> August 2019.

### **Background:**

In the UNSW Medicine program, student engagement in the evidence-based practice sessions varied, with feedback showing that group-based sessions achieved greater satisfaction and engagement.

### **Methods:**

To improve student engagement, the lessons were revamped to a team-based learning approach. Two student tutors were recruited to spearhead lesson development, under the supervision of an experienced university academic.

### **Results & Conclusions:**

The student collaborators thoroughly enjoyed the collaborative process and developed an effective team-based, student-centered program, which received positive feedback from participants. They also gained a better understanding of educational pedagogy and learning styles, thus benefiting their future learning.



Poster:

## Medical ethics education in Australian and New Zealand medical schools, thinking big.

Adrienne Torda<sup>1</sup>, Jack Mangos<sup>1</sup>

<sup>1</sup>University of New South Wales Sydney, Australia

Accepted and displayed at ANZAHPE 2019.

### Introduction/background:

Teaching medical ethics (ME) is a core component of all medical curricula in Australia and New Zealand (ANZ). Interestingly, there is no consensus in the literature about the main goal, best methods of teaching or assessing ME. In 2001, a core curriculum for teaching ME in ANZ was published by the ATEAM built upon 3 elements – knowledge, skills and attitudes.

### Aim/objectives:

To investigate how medical ethics (ME) is being taught within medical faculties across Australia and New Zealand (ANZ), and how this has followed on from a proposed core curriculum.

### Methods:

We conducted a mixed methods study using an online questionnaire. This included both binary and open-ended questions to both categorise and explore similarities and differences in ME curricula in medical programs across ANZ.

### Results:

Convenors from 15 universities responded (65%). The main commonality that emerged was that ME curricula were integrated both laterally (with other course content) and longitudinally (across campus to workplace). The goals, format, educators, and assessments of the ME curricula were highly variable.

### Discussion:

The great variability of ME curriculum design and format may reflect context specific restrictions. It may also reflect the lack of data in relation to 'best practice' in teaching ME.

### Conclusions:

Since the publication of a core curriculum for ME, most medical programs have undergone major overhauls. Although the core goals of including knowledge, skills, and attitudinal development in ME curricula are still present, there is no uniformity in terms of competency set, format or assessment across medical programs in ANZ.

Poster:

## **Classie learning – incorporating experience and emotion into the process.**

Adrienne Torda<sup>1</sup>, Stephanie Dowdell<sup>2</sup>

<sup>1</sup>Office of Medical Education, <sup>2</sup>School of Medical Sciences

Accepted and displayed at ANZAHPE 2019

### **Introduction/background:**

The CLASSIE project (Clinically applicable student studies in Ethics) is an innovative project designed to develop educational modules for teaching 'Ethics in clinical decision making' to senior medical students that incorporates emotion, experience and reflection into their learning process.

### **Aim/objectives:**

This project involved the development of a series of clinical scenarios presented to the students as an immersive experience via VR technology, that simulated being within the clinical scenario. Each VR scenario triggered learning activities based on the ethical dilemma in the clinical scenario.

### **Discussion:**

The need for this emerged out of the fact, that senior medical students are clinically placed across a wide variety of hospitals and clinics and have very variable experiences. We wanted to give them some calibrated learning materials to support their development in the 'Ethics and Legal' capability. Evaluation was done on engagement, knowledge gains and user experience. Engagement rated highly, as did self-perception of knowledge gains. User experience was mixed. Reflections on the clinical anchoring of these modules, were incredibly good.

### **Issues/questions for exploration or ideas for discussion:**

Most students valued the VR experience of the scenarios, but a small number didn't enjoy the VR aspect of the videos (particularly any technical glitches). Some students even wanted transcripts which would allow complete bypass of the clinical scenarios. The main issue this raises is how to help students appreciate the benefits of an immersive experience in learning that reflects real clinical experience, but is not the fastest way to complete a learning activity.