Abstracts: Presentations, workshops and posters

In-class polling: increasing student engagement in a digital world

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Classroom response systems, such as clickers, have been shown to enhance student engagement, improve student learning and increase student performance in tertiary education. For teachers, the benefit of these technologies lies in being able to track class progress and identifying misconceptions and gaps in learning. As we head into a more digital world, investigating innovative and digital technologies to improve student engagement and provide immediate feedback to students is important. This paper reports on the processes and outcomes of a pilot project investigating whether the use of an in-class polling tool influenced the attitudes and student levels of engagement in a first year undergraduate core unit. This intervention was implemented in the workshops of a content-heavy human biology unit where first year students come from 23 undergraduate courses with varying educational backgrounds. This project involved sourcing and implementing a suitable polling tool to use in the workshops as well as designing a student evaluation questionnaire to determine student engagement and attitudes towards the use of the polling tool. The results show that in-class polling has a positive association with student attention, participation, interaction and discussion which may positively reflect on student engagement and attitudes. This presentation will be of relevance to those interested in enhancing student engagement in the classroom by the use of simple-to-implement and innovative mobile technologies.

The ability of virtual reality in enhancing engineering education

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One of the potential limitations of engineering education programs is that theory is taught with little apparent relevance to practice. This presentation discusses the capabilities of virtual reality (VR) based education in engineering education and methods for using this technology in classrooms. VR allows students to get a sense of presence in simulated environments in a realistic, safe and controlled manner. By using VR in classrooms students can learn and apply new skills, and simulate dangerous and risky exercises to enhance their understanding. VR can improve retention of learning, as seeing and doing is better that just listening and reading. Furthermore, some complex concepts and theories can be made easier to understand through VR.

VR is a good way of getting your students to explore ideas in real time in an exploratory setting, and can improve their motivation to study a subject. This is because they have an opportunity to discover new ways of learning via fully immersive technologies in which interaction is the main focus. There are two main ways of using VR in the classroom, one being a desktop set up with students wearing VR glasses, and in the other students wear a head mounted display and data glove. VR is also beneficial for lecturers and universities as well, as it can offer a convenient and cost effective way of teaching.

Challenge-based learning: A new approach for online collaboration in higher education

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Higher education is currently transitioning from traditional pedagogies based in single-disciplinary classroom lectures to multi-disciplinary strategies facilitated by online, team- and problem-solving based learning. The Internet and new modes of social interaction are contributing to this transition by providing the tools to create more participative and open forms of teaching and learning, mediated by collaborative learning environments, and including new modalities of online interaction and team work. Different Web 2.0 and online social software applications are currently being used to extend the scope of traditional learning environments and facilitate students' teamwork and collaboration. These software tools include: social media, blogs, wikis, tagging systems, mashups and content-sharing sites. However, and despite the availability of a large range of social tools, it is still difficult for teachers to find ways of planning, conducting and especially, assessing student-generated content and interaction in online learning environments.

In this presentation, we describe how learning analytics and dashboards can provide a solution for collaborative assessment, allowing for the analysis of individual and teamwork variables and their visual representations. We explain our previous work in monitoring and supporting assessment of collaborative learning using learning dashboards, and discuss the challenges and opportunities of online collaboration in education. We also introduce a new approach for challenge-based learning at Curtin University. Curtin's *Challenge app* is a mobile learning application that gamifies online learning, team-based design and problem-solving experiences to provide students with curricula and co-curricula activities that enhance skills development and career opportunities.

Collective respect: A whole-of-institution framework for an interculturally inclusive curriculum

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There has been a lot of discourse at Australian universities in recent years about embedding Aboriginal and Torres Strait Islander perspectives in the curriculum as a means for providing a culturally inclusive learning experience for Indigenous students, and building the cultural competence of non-Indigenous students. Most of the measures proposed in this space revolve around the inclusion of appropriate Indigenous content or the inclusion of Indigenous perspectives into existing content. In this presentation we propose an alternative view of what it means to provide an interculturally inclusive curriculum with a focus that extends beyond the academic content. Our framework has four facets of the curriculum that are acted upon: teaching, learning, content and environment. The responsibility for influencing the curriculum in these four areas is extended beyond the teaching staff to include staff in other non-teaching areas of the university. This is effectively a whole-of-institution approach that benefits not only Indigenous and non-Indigenous students, but also Indigenous and non-Indigenous staff.

Collectively, all of these agents of curricular influence can have a profound effect on how well an education institution accords its Indigenous students cultural responsiveness, cultural safety, and most importantly, cultural respect. Similarly, this whole-of-institution framework can contribute in a meaningful manner to institutional goals around producing graduates equipped to work knowledgably and respectfully with Aboriginal and Torres Strait Islander Australians in the wider community.

Strategies implemented to increase the efficiency of *Discussion Board* for fully online students

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Discussion Board is a tool used by many tertiary institutions to encourage online students to communicate with academic staff and other students. Academic staff may use Discussion Board solely to convey important information and course material, and/or to allow students to engage with one another on topics relating to the course content and assessments. However, the level of use by online students of Discussion Board since its implementation has shown to be poor, with online students failing to utilise it and view it as a tool to better enhance their studies.

Introduction to Commerce is a unit run by the UniReady Enabling Program by Curtin University in both internal and fully online mode. Since the unit has undergone significant content and assessment change in early 2015, various strategies have been implemented to Discussion Board to encourage online students to use the tool and also to provide them with the same experience and material as the internal students receive, wherever possible. Since the implementation of these strategies, which will be the focus of this presentation, there has been a significant increase in the use of Discussion Board, not only at the beginning of the study period, but continuously throughout. This presentation will be of particular interest to those who are seeking to better engage fully online students within their unit through the use of Discussion Board.

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55 minute workshop
Games and gamification: When, where, how, why?

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'Gamification' is defined by many scholars as the use of game design elements in non-game contexts. The use of gamification as a way to influence behaviour is becoming increasingly established in the business world (see work by Kevin Werbach). It is the subject of numerous books, articles, and TED presentations. However, the use of gamification (as opposed to educational games) in the college classroom is still rare.

In contrast, games in the context of learning has been the topic of intense interest. A wide range of theoretical and experimental approaches have demonstrated the value of educational games in learning. Researchers such as Jim Gee in Arizona, Kurt Squire at the University of Wisconsin and many others have written extensively on topics such as the way that games privilege doing over knowing, leading students to learn through action – or demonstrated performance of their knowledge. Players of games learn more than just facts or procedures. These are critical findings, but we still have a tendency to dismiss games and gamification as somehow trivialising our material.

In this session we seek to unpack misconceptions and explore the positive use of games and gamification. 'Games' and 'gamification' are terms we see with increasing frequency. They are often confused with one another, yet they are in fact distinct in purpose and outcome. Games directly influence learning. They can be tuned to different levels of thinking to elicit different outcomes. In contrast, 'gamification' is the use of game design elements (the things that make games engaging) in non-game contexts. Gamification affects learning indirectly by influencing behaviour.

In this short workshop we will explore the use of games and gamification to engage students and motivate learning. We will review the concept of games as a tool to impact learning, versus gamification (use of game elements to influence behaviour). Participants will see examples of each and will have an opportunity to consider how they might incorporate the use of games and/or gamification in their own classrooms.

After participating in this workshop session participants will be able to:

- Name the basic principles of gamification and distinguish gamification from games and gameplay;
- Evaluate the use of gamification and games in college classrooms as tools to increase student engagement;
- Identify an aspect of their own courses where the use of games or gamification might improve learning and propose a revision that incorporates games/gamification.

Teaching students to think: Embedding employability across the curriculum

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Employability has received significant attention in recent years. However, the challenge of embedding employability development within higher education remains in critical need of attention. This presentation introduces a program of change that aims to build the sector's capacity to prepare graduates who are active and intentional in the personal practices that support their work and learning. The presenter will outline evidence-based interventions, case

studies, strategies for engagement and a framework for employability development. The session will trouble higher education's focus on functional aspects of employability such as the ability to succeed at interview. Rather, it will emphasise the cognitive and social aspects through which learners develop as individuals, professionals and social citizens. As such, employability is defined as the ability to find, create and sustain work and learning across lengthening working lives and multiple work settings. This focus reflects a fluid labour market in which work is transforming and workers are increasingly mobile, meaning that employability has to be maintained across the career lifespan. This has significant implications for higher education in terms of broadening the focus from a graduate occupational goal to a lifelong professional orientation. Hence, the educational goals of employability development relate to both initial preparation and to graduates' ability to think: to traverse multiple work transitions by developing and engaging personal epistemologies of practice.

Come to the Dark Side, we have lab coats: How we're motivating students to become researchers

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Biomedical and Medical Science students at ECU are exposed to a myriad of laboratory techniques throughout the course of their undergraduate degrees. They gain a lot of hands-on experience with world-leading technology, but this does not fully prepare them for the realities of life as a researcher. In an attempt to give our undergraduate students a glimpse into life after graduation, we ran a pilot 'Melanoma Summer Student Research Project' (MSSRP) in early 2016, with great success. Students participated in a competitive application process, with those selected taking part in an intensive, three-week laboratory experience. Students were exposed to a wide variety of research protocols, many of which cannot be offered at an undergraduate level due to time and budget constraints. They were also provided training in scientific literacy and database mining, two key components in any research career. At the conclusion of the program the students reported that the MSSRP provided a fantastic opportunity and made them aware of a new world of possibilities after graduation. Students from the pilot project actively promoted the opportunity to their peers for the second offering, and their enthusiasm has seen the application numbers more than triple. The second running of this project will be completed in December of 2016, and with continuation should see more students being encouraged into taking up a career in research.

Interprofessional student placements: A guide to ensuring quality learning experiences

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The ability to collaborate across discipline boundaries is viewed by many as a critical capability for graduates in the 21st century. Whilst much can be done in the university context to develop interprofessional collaborative capabilities, practice or work environments provide an ideal context for students to engage in interprofessional, team-based learning experiences. Curtin's Faculty of Health Sciences has successfully implemented a large scale interprofessional student placement program. From humble beginnings of five pilot placements in 2009, the program now provides approximately 500 students per year with a team-based interprofessional placement. This presentation will focus on describing this model of work-integrated learning and the practicalities involved in implementation.

Designing a new business unit that develops global graduate capabilities: What can be taught and how can it be assessed?

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A new unit, *Doing business with Europe*, was developed as an elective comprising three elements: business, culture and language. The overall aim was for students to develop the sort of intercultural competence which would prepare them for a global business context, and also

introduce them to cultural and linguistic aspects of the focus European country, which can change every time the unit is offered. The inclusion of a linguistic element into a business unit is unusual in business studies in Australia and there was some concern that it might not appeal to students. This was not the case: students enjoyed the language taster component and some have told us this is what attracted them to the unit in the first instance. The unit was developed and taught by two lecturers based in the Curtin Business School (Management), both with a background in language teaching and education. Essential dilemmas facing staff developing and teaching the new unit included: the business/political content to be addressed; how to divide the content between the three elements of the unit; what achievement expectations could we place on students; and how to develop and assess global intercultural skills. This paper examines the above issues and how student achievement in the various elements was captured and assessed.

Using the 'Manager-as-Coach' model to support development of student autonomy

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One of the recurring themes often expressed by new students in the UniReady enabling program is lack of confidence in their abilities to progress through the course and into undergraduate studies. Students may have limited experience with study skills, may not understand how to recognise or develop their potential, and may rely heavily on tutors to feed them information. They may also see it as the tutor's responsibility to ensure they pass their enabling course. In the time-poor teaching environment it can be tempting to supply students with answers and offer solutions. However, students need to be supported in developing the more effective and sustainable characteristic of autonomy.

Research suggests that supporting students in developing autonomy may result in greater engagement with their studies and greater confidence (as well as greater course satisfaction and enhanced employability). Early indications and anecdotal evidence used in two units of the UniReady course suggest that the *Manager-as-Coach* model (offered at Curtin as part of their leadership framework) may be an effective tool in supporting the development of autonomy in students. This presentation will outline techniques from the *Manager-as-Coach* model that may be used by unit coordinators and tutors to develop student autonomy and potentially improve their chances of remaining engaged with their course, and setting them up with skills that will enhance their chances of success in their future studies.

The 'gift' that keeps giving: The role of Indigenous Australian studies in building graduate capability for an uncertain global workplace

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The changing nature of work and an uncertain future means that graduates need to be agile and adaptive, and equipped to manage ongoing change. The drivers predicted to impact on work include technology, disrupted economies, environmental degradation and expanding globalisation. To address the 'wicked' problems facing society, and in recognition that individual disciplines cannot alone find solutions, workplaces will become more collaborative, requiring high levels of interdisciplinary teamwork. In these changed and changing conditions, university graduates need to be resilient, adaptive, creative, and able to tolerate uncertainty and disruption. Whilst intercultural capability has been identified as important for the growing globalised future, most academics lack the confidence, knowledge and ability to teach the 'soft' intercultural skills which extend beyond familiar disciplinary knowledge. As a consequence of this lack of understanding and ability, universities have tended to think of global citizenship—and indeed graduate attributes broadly—in narrow terms. Dominated by whiteness and Western ontology and epistemology, Australian universities have failed to recognise the 'gift' of Indigenous Australian studies in building capacity to work with ontological pluralism and develop the generic capabilities associated with global citizenship, interdisciplinary collaboration, communication, teamwork, and critical thinking. Informed by our experience teaching Indigenous Australian studies utilising the 'pedagogy of discomfort', we will argue in this theoretical presentation that the 'unlearning' which Indigenous Australian studies requires is productive in generating

tolerance for disruption and uncertainty and the generic graduate capabilities essential for future work.

Using 360 degree video in higher education

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In 2017, the Centre for Education Futures will pilot the use of 360 degree video as a resource for teaching and learning at the UWA. In this session, project coordinator Michelle Bunting discusses her experiences working with 360 degree video and the value it can bring to the student learning experience. Ezrina Fewings from the Futures Observatory concludes the session by reflecting on whether 360 degree video can move beyond the 'novelty factor' to become a definitive part of education futures.

Strategies and tools supporting the feedback process for second language learning

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In second language learning, feedback has been the subject of several studies in the last few decades, all agreeing on its beneficial role in providing learners with information that they can actively use "to confirm, disconfirm, and possibly modify the hypothetical, transitional rules of their developing grammars" (Ferreira et al., 2007: 395). Giving individual and regular feedback to all students in a university language course is challenged by a variety of factors. In the context of the recent explosion in languages enrolments at The University of Western Australia, a priority was identified to re-imagine the feedback process to ensure it becomes a means to learning success. In this environment feedback must not only be regular, constant and individual, but also detailed as well as less time consuming. In 2016 we developed new strategies and materials to make feedback in language learning not only effective, but also more efficient. These include: a set of short videos designed to support student literacy about feedback; an online interactive coversheet to be submitted by students with their written assignment; and a data bank of feedback comments for on-screen feedback on written work. These materials have been initially incorporated into courses of French, Italian and Korean. This paper discusses first the results from a focus group discussion with language educators, which informed the design of the tools. It also presents the major findings of the student evaluation of the new materials, which was carried out via a survey. The survey addressed particularly the areas of use, engagement and effectiveness. The results suggest that awareness and literacy about the feedback play a major role in student engagement with feedback, and that students support the use of on-screen feedback.

References

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Leading the way: Developing an advanced program for leadership in learning and teaching scholarship

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A vital dimension of learning and teaching innovation is to develop academic staff as leaders of innovation. It is essential that we work to develop pathways for leadership in learning and teaching in university settings. Murdoch University's Centre for University Teaching and

Learning, together with the School of Education, has successfully won a WAND Small Grant to develop such a pathway. The project also includes Discipline Champions from each to the Murdoch Schools ensuring that the impact of the project is across the whole institution.

The project aims to develop a program for the professional development of academic staff as leaders of learning and teaching innovation in a discipline specific setting, whilst filling an important gap in WA universities between programs that introduce the scholarship of L&T, and institutional and national award schemes.

This program would be fully self-sustaining and made available to all WA institutions. It is intended that this programme would be subject to Higher Education Academy accreditation (HEA), and, thus, will offer HEA Senior Fellowship opportunities directly to participants. This session will be co-presented with Discipline Champions who have graduated from the pilot offering of the Murdoch University Certificate for Learning and Teaching and have gone on to develop case studies that will include an evidence-based rationale and impact data from the implementation of these case studies in practice. Early findings, case study briefs and future visions for the program will be presented, with feedback and discussion from session participants encouraged.

Looking back to see forward: Critical reflexivity in Indigenous and cross cultural psychology

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The 'Indigenised curriculum discourse' has been explored at a national and local level as a means to bring both Indigenous perspectives, and issues faced by Indigenous Australians, to the fore in dominant psychological practices. The unit *Indigenous and cross cultural psychology* is designed to promote cultural capabilities within undergraduate psychology students at Curtin University. As critical reflexivity is central to understanding one's worldviews and promoting cultural capabilities, this research explores: what is the level, nature, and content of critical reflexivity engaged by students enrolled in *Indigenous and cross cultural psychology* at Curtin University? Students were invited to engage in a reflexive exercise at the beginning (n = 44) and end of semester (n = 23). Data were analysed for level and content of reflection. We found that students' active positioning of themselves and emotional engagement with their reflections was enhanced at T2. Students expressed difficulty with saying things the 'right' way and feeling self-conscious which, at times, limited their participation in learning activities. A worldview emerged that those who conform to dominant Australian Western ideals are 'acultural', with students' attention primarily focused on the study, and understanding of, 'other' cultures. Informed by our experiences teaching Indigenous Australian studies as non-indigenous and Indigenous academics, we will argue in this theoretical presentation that we cannot yet claim that we are producing critically reflexive, and by extension, culturally capable, graduates. These findings hold application to tertiary education settings Australia-wide with an emphasis on Indigenising curriculum across faculties.

Australian Professional Tertiary Teaching Standards (APTTS) Framework: Do we need one?

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A discussion paper titled "A case for the use of standards in recognising, evaluating and rewarding university teaching" has been posted to the website http://www.recognisinguniteaching.edu.au to seek feedback from colleagues and organisations on the discussion paper and on the draft framework. The following questions are posed:

1. Do you consider it worthwhile working towards a distinctive Australian Professional Tertiary Teacher Standards (APTTS) framework?
2. Critique and comment on the draft name of Australian Professional Tertiary Teacher Standards (APTTS) framework.
3. Do the three categories of (1) Environment, (2) Professional practice and (3) Attributes and capabilities provide a useful distinction to categories the criteria? Suggest others, comment.
4. Do the 12 criteria adequately incorporate the qualities that tertiary teachers should be able to demonstrate? Suggest others, comment.
5. Can you suggest edits or comments on the framework wording to improve/simplify it?
6. Can you suggest ways to strengthen the rationale?
7. Other comments?

The presentation will provide a brief overview of the draft APTTS framework and summarise the responses received to date. There will be time for discussion and seeking your comments and responses to the questions above. Further comments and responses directly to me will also be very welcome.

Just in time, just for you

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Curtin University Library staff have used many different innovative measures to enhance our learning and teaching experience. We have investigated and used *Captivate* software to teach various referencing styles that the University supports. We have embedded librarians within the *Blackboard* units to increase their visibility and provide support to students any time and anywhere. We have developed subject-specific, generic, and unit-specific guides, quizzes, and videos to support our students. We have adopted a flipped classroom style in our information literacy workshops, and provided resources in advance for students to prepare. We have used various surveys and feedback mechanisms to improve our services. We have used lecture capture software such as *Echo 360* to record our training sessions for distribution, which is very helpful for supporting students with different learning styles. We have developed online referencing support and provided FAQs via our knowledge base so that students can get 24/7 support. We have been using *Skype, WebEx* and *Blackboard Collaborate* to provide online training. We have made the Curtin Library *Makerspace* develop as a learning space to foster the development of skills such as digital literacies, critical thinking, complex problem solving, creative and iterative design, and collaborative learning. We have successfully embedded data management into key research processes since 2015. The Library supports all aspects of research by providing proactive support. We have been working on a Reading List Service which will be implemented in the first semester of 2017.

The utilisation of *Blackboard Collaborate* for teaching and learning in online units of study

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Curtin University currently offers a wide variety of online units, some of them via Open University Australia (OUA). These online units provide learning opportunities and flexibility for students who cannot attend classes on campus due to constraints of distance and scheduling. While lecture materials, content and discussion can be accessed asynchronously, OUA students have suggested in eVALUate surveys that OUA units would benefit from a synchronous element to allow for real-time interaction. *Blackboard Collaborate*, featuring video conferencing, text, voice chat and interactive whiteboard, provides a synchronous, collaborative learning environment for online students. The advantages of using *Blackboard Collaborate* to enhance online learning experiences and mitigate the virtual distance have been reported in prior research (Schroeder, 2002) but there has been little research carried out in an Australian context. As such, this study aims to evaluate (1) lecturers' perceptions of the usefulness of *Blackboard Collaborate* for online units and related issues; (2) the challenges of incorporating *Blackboard Collaborate* into online units; and (3) the extent to which *Blackboard Collaborate* enhances the learning experiences and engagement of online students.

A mixed methods research design has been used to collect both qualitative and quantitative data from lecturer and student participants, through semi-structured, face to face or online interviews and open-ended/closed-ended survey questions. Preliminary findings form a platform for the discussion of issues connected with the use of *Collaborate* as a virtual class and the related challenges. Recommendations for the optimal use of *Collaborate* in online units will be discussed, and observations and experiences invited from the audience.

Developing numeracy to promote success in health sciences

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Numeracy underpins the core competencies of many health professions. The ability to collect, analyse and correctly interpret numerical data is critical, yet numeracy remains an identified concern amongst tertiary graduates. This research aimed to assess and support development of the skills, competency, and disposition towards mathematics in health sciences students.

A total of 117 Curtin University students were invited to participate in the study. They were distributed across the undergraduate BSc courses of: Nutrition (n = 74); Nutrition and Health Promotion (n = 10); Food Science and Technology (n = 22); and Science majors (n = 11). The study intervention consisted of four numeracy support modules that were embedded into the usual face to face teaching delivery and delivered by a numeracy educator. These modules were delivered to all students in laboratory classes either at the beginning or second half of semester using a randomised crossover experimental design at the laboratory class level. Diagnostic tests were administered at baseline, midway, and end of the semester. Tests consisted of a set of discipline specific mathematical questions, and questions relating to willingness to engage in maths, to assess competence and confidence in maths respectively. Outcomes from this research, supported with further analyses, may justify implementation of such a framework into university health sciences courses to assist tertiary students in meeting graduate course and learning outcomes.

A further dimension: *Instagram* in the foreign language classroom

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This paper critically investigates the implementation of the social media application *Instagram* in a first-year unit of Italian at The University of Western Australia. Following on recent work on the implementation of blogs and social media in higher education, *Instagram* was implemented in Italian Studies 4 in the second semester of 2016 to add a further online dimension to those of the classroom and the unit's *Blackboard* page, in order to provide a more rounded learning experience. Four assignments were carried out on *Instagram*, aligned to the culture program of the unit, assessing both culture knowledge and use of language. Surveys and interviews were conducted at the end of semester to verify students' and teachers' opinions on the experience and discuss future implementations.

Instagram allowed for the creation of an online community of Italian learners, which exceeded the cronotopical dimensions of the classroom and achieved a level of immersion which is ideal for language learning. The synergy of these three dimensions contributed to foster student engagement and learning in a transmedia environment. Considering its popularity among millenials and its ease of use, *Instagram* could easily be embedded in other future curricula, particularly, although not exclusively, in second language acquisition. It has the potential to even expand beyond semester, accompanying students in their ongoing learning of a second language.

Developing practical innovation skills in graduating tertiary students through applied teaching practice

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The aim of this presentation is to address the discrepancy between the skill sets developed in university settings and those required in work settings. The Australian Government places a high priority on economic growth through innovation. Paradoxically, university teaching methods don't appear to be addressing innovation skills adequately. High levels of trust and tacit knowledge are two drivers of innovation, which are rarely addressed by tertiary education. Innovation is about the implementation of a new way of thinking (OECD, 2005). Innovation skills can be learnt (IBSA, 2009). A new program, referred to *Psycho-social Change and Innovation* (PSIC), has been developed by Bishop & Colquhoun Consulting (2015). PSIC uses the 'Innovation square' as a process for achieving innovation through tacit knowledge and trust development, in which relationships move from information sharing to imitation, to interdependence, to innovation and independence. Varying levels of confidence, enthusiasm, experience and competence exist in each phase of the relationship for the learner. For the leader/lecturer, direction, example, consensus and explanation varies at each phase. Psycho-social innovation and change is not easy to achieve, it requires a new way of learning about oneself and others around us. This is achieved through a 'learning circle', which is a highly interactive, participatory structure for organising group work. The presentation will describe the program and the evaluations of this program at Curtin University from trials focused on teaching practice for academic staff and learning for higher degree by research students.

In my classroom: Using technology to enable pre-service teachers to see behind the scene

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Technology has provided great opportunities to see what has previously been unseen. Although it is often used for seeing further away or enlarging smaller views, opportunities also exist for technology to provide insight into what happens behind the scenes. This is the focus of using technology for the project *In my classroom*, made possible through a Teaching Excellence Development Fund grant provided by Curtin University. Images were taken of a pre-primary classroom to show what a classroom looks like. This type of environment would be familiar to many pre-service teachers as they themselves have been within these classrooms as students. Using technology, these images were 'stitched' together to create a 360 degree immersive environment that could be manipulated by moving it around and zooming in on specific work samples and activity settings visible in the classroom. The greatest affordance of the technology, though, was the capacity to connect what was seen with what happened to create it. By working with the educator from that classroom, information on what the educator did to create that environment and the work samples resulting from learning experiences were connected to the immersive environment. This enables the pre-service teacher to gain insights from the perspective of what educators do – what resources were used, what the goals of the lesson was, how the educator felt about the progress of the learning experience – helping them to connect the theory they have learned as pre-service teachers with an actual classroom environment.

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55 minute workshop
What is your reality? Using virtual reality and augmented reality in your classroom to enhance learning experiences

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Much media coverage has been given recently to these immersive technologies that are now coming into the mainstream, at a price point that consumers can access. So, what does this mean for the education field? It is early days in this new educational opportunity and teaching

and learning stands to benefit greatly from these immersive technologies and all the opportunities it presents. This workshop will introduce virtual reality (VR) and augmented reality (AR), and look at what educational experiences are currently possible and what could be possible in the near future. You will also have the opportunity to try some of this technology and ask as many questions as you like. The outcome for the workshop is to make this technology accessible and useable by educators of all 'tech' levels, so come along with an open mind and lots of curiosity.

What will I do in this workshop? Essentially you will.…

- Learn what is VR and AR
- Learn how it can be used in tertiary education
- Create some VR content
- Use AR content
- Leave with some ideas on how VR and AR can be used in your teaching.

The workshop will have three parts. The introduction to the session will include

- watching a short video and
- listening to a presentation from the presenter.

The presentation will discuss the two main types of immersive technologies:

- Virtual reality (VR) provides an opportunity for educational experiences that cannot normally happen in the classroom like being an ER doctor, travelling through space or a blood vessel and even skiing down a mountain.
- Augmented reality (AR) content can be accessed by scanning or viewing a trigger image with a mobile device that creates a subsequent action like a video, another image, website, 3D animations, games, or whatever you want it to be. The beauty of AR is that the learning experiences can be as easy or as complex as you want.

The second part of the session will be about VR. Participants will be using the *Google Cardboard Camera* app, on their own smart phones (please download prior if possible, https://play.google.com/store/apps/details?id=com.google.vr.cyclops&hl=en), to create a 360 degree image with audio annotation and learn how to share this image and how it could be used in teaching and learning experiences. The participants will view the image in the *Google Cardboard* app and there will be some *Google Cardboard* headsets available to try it with to see the images in VR.

The third part of the session will be using your smart phones with an app to see an AR simulation of the human body and the heart. Participants will download a free app on your smart phone to view the simulation (*Anatomy 4D* by DAQRI - please download prior if possible, from http://anatomy4d.daqri.com).

Throughout the workshop you will be able to ask questions. It will be an opportunity for you to see, experience and learn how you could use these technologies in your learning area to create immersive learning experiences for your students. *The opportunities are boundless.*

Assessment and feedback futures: Agile implementation of a digital first assessment policy

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During 2015 The University of Western Australia developed a University-wide assessment policy following a review conducted by a working group. From 2016, the *Assessment and Feedback Futures* project is supporting the implementation of this comprehensive digital-first policy spanning the assessment life cycle. This presentation will share the project's iterative and agile approach to the development of staff capability and capacity, utilising a small scale pilot of activities and resources (including face to face, webinars, infographics, checklists, and micro-videos) in preparation for scaling up to equip the University to meet the requirements of the policy by 2018.

Can co-teaching be used to improve intellectual involvement and the scholarly profile of sessional academics?

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Co-teaching involves two teachers jointly taking responsibility for planning and presenting learning activities to a group of students. Co-teaching is a new pedagogical classroom practice in first year undergraduate core units in health sciences, largely taught by sessional academics. These sessional staff are well qualified but not engaged with their academic development in a changing tertiary environment. Little is known about how effectively these sessional academics work together or understand the teaching demands and philosophical basis of a co-taught classroom.

Building on the positive feedback of a previous pilot study implementing co-teaching peer review, this project was extended using an action research approach to a larger cohort of co-tutors. The aim was to conceptualise co-teaching, improve teacher involvement and engagement amongst sessional staff, and also to reaffirm the previous results with a larger sample of academics. Two previously developed tools were used to facilitate pedagogical discussion among the sessional academics. Participants were asked to reflect and report on their interactions and experiences in the co-taught classes, and also participate in a series of group meetings to monitor tutor responses to the relevance and ease of use of these tools. In this presentation emerging themes and an interpretation of teacher's perspectives of co-teaching gained from these tools, meetings and reflective journals will be discussed. The findings suggest that co-teaching is more effective with teachers who have undergone training in co-teaching and are intellectually involved.

Motivating young adults online

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The challenge of motivating young adults persists in any environment, particularly a virtual one where the lack of physical presence can perceivably compound potential issues. This presentation attempts to provide tools for motivating young adults in an online educational environment, using four widely-accepted motivation and learning theories: Vroom's *Expectancy Theory*, Deci and Ryan's *Self-Determination Theory*, Seimen's theory of *Connectivism*, and Jones' *MUSIC Model of Academic Motivation*. Through a combination of understanding and finding commonalities in multiple theories, knowing your students and how they are driven, and applying them to the instructional methods and technology in place, teachers in online environments can deploy certain strategies to improve the learning potential and persistence of young adult learners.

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55 minute workshop
The Agency: A technology enhanced learning space that transforms student learning

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In this workshop participants experience how the use of technology enhanced learning spaces and technology enhanced learning tools create learner engagement through the delivery of live case learning. The intended audience for this workshop is those educators who want to experience a leading technology enhanced learning space, and understand how technology enhanced learning tools can be used to enrich the learning experience.

The workshop will take place in The Agency, in Building 408 on Curtin's Bentley campus. The visual and functional highlight of The Agency is the *Social Media Command Centre* and its *Media Wall*. The Media Wall is an array of 9 large LED screens displaying text, visual and numerical data presented via the software *Radian6*. For a *YouTube* video overview of The Agency and *Radian6* see https://www.youtube.com/watch?v=UteOSDom97U

Participants will be presented with a live case and use social listening software to interact with a real and variable situation. Participants will use aggregated data from the social web: news media, *Twitter*, blogs, forums, F*acebook, My Space, Instagram* and *Linked In*, to think critically about the case, responding to real-time information. In doing so, they will immersed in a real issue that is having an immediate impact on an organisation, an industry or a country. Participants do not require any previous expertise.

The workshop will begin with an overview of The Agency, and the *Radian6* software that enables live case learning. Participants will then be debriefed on the case, and participants will be immersed in the case for 35 minutes. There are 24 computer stations within The Agency that participants will use to interact with data, explore the issues and to think critically about the implications for the organisation. Participants will discover how technology enhanced learning helps develop critical thinking and learn how technology enhanced live-case learning can be implemented in a higher education context.

Transformation of traditional passive surveying learning to an engaging and interactive learning environment: A case study

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Surveying has interlocking theoretical and practical components that include mathematics, physics, and engineering. To change the traditional passive teaching environment typically used in surveying an advanced approach was implemented that engages students as active partners in their own learning. A demonstration of this approach is presented. Throughout the lecture short-breaking activities are applied, which engage students in reflection and group discussion to confront their understanding of core and threshold concepts. Students argue each other's findings. To garner students' curiosity, the lectures start with a formative short quiz of a few minutes to link previous contents to the current lecture and raise students' interest in following how the objectives can be achieved. A blended learning method is applied that combines classroom learning with mobile e-learning. The weekly fieldwork is formulated in context-rich problems using short realistic scenarios to give students a plausible motivation for solving the problems. Students implement a documented problem solving method where they are requested to show that they meet industry standards. A scaffolding coached problem solving format is implemented in which a structured, guided context is offered to solve real-life problems in surveying. With time, students move to an independent, student-led approach as their experience, analytical and critical thinking skills grow, such that in their final practical they execute their work with little guidance.

Student performance and understanding of the subjects before and after implementation of the presented approach are discussed. Moreover, results show that students' physical attendance rate in classes improves with the implementation of this approach.

Improving student understanding and interest in complex subjects using *FastFeedback Questions*

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How to engage students in learning is a well-documented topic, however it still remains 'a challenge'. The use of *FastFeedback Questions* (FFQ) is a new teaching approach that has been developed to engage students in complex subjects. In this project, *FastFeedback* (FF) was implemented in a second year Biomedical Sciences unit, *Foundation of Clinical Biochemistry*. This presentation will describe how the strategy was implemented in face to face lectures. In this project, FFQ utilised focus questions delivered via *PowerPoint*, where each slide contained questions directly relating to content on that slide. Students were given pre-lecture *PowerPoint* slides containing the 'focus questions'. During the face to face lectures, the *PowerPoint* slides were shown, including the answers to the focus questions. The immediacy of the answers to the questions is why it is called 'FastFeedback'. This novel method was used in 2015 and 2016 and its effectiveness was evaluated from students' grades including the final examination; as well as some comparative analysis against previous years (2010-2014). The student responses to the effectiveness of the strategy were evaluated using a survey and a focus group. The students liked the FFQ and they requested that it be implemented in other units, especially those perceived as being complex units. We believe

that this new method can provide students with a scaffolded entry into new material that is perceived as difficult.

Does *Fastfeedback* in a first year anatomy and physiology class affect mastery of content?

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Fastfeedback (FF) is a novel teaching method that alerts students to the importance of key information in a lecture. This presentation will look at the implementation of FF in an online lecture and its effectiveness in two modules in an in a large first year anatomy and physiology class. The modules used were female and male reproduction. Marks allocated for the unit resulted in 40% of the final examination mark coming from these two modules. The lecture slides had accompanying slides containing questions directly related to each content slide. The questions were taken from an expanded concept list previously prepared and available to students online. In the lecture these extra slides were unavailable but were when downloaded by students. Students were notified as to the new format. The effectiveness of the use of FF was determined firstly by the marks scored in these modules. Focus groups were also held to determine how students viewed feedback in the unit as well as being surveyed about their perception of feedback and its effectiveness. This workshop will illustrate the implementation of FF and the results of the final exam, analysed using an independent samples t-test across several semesters. The significance of this data will also be discussed as well as the findings of the survey and focus group.

WhatsApp mobile messenger (WaMM) as an innovative approach in reducing power distance in teaching and learning

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The aim of this presentation is to explore the *WhatsApp mobile messenger* (WaMM) as an innovative approach in reducing power distance as well as being a tool in teaching and learning, especially amongst Asian students. A review of extant literature indicates that the mental constructs of some Asian students not being able to question lecturers openly in the physical classroom inhibits their critical thinking, and drives them towards memorisation of theories and knowledge (Dimmock & Walker, 2005). Perhaps among other reasons that explains why some Asian students have excelled in the sciences, for example in medicine and information technology (Saran, 2016). On the other hand, knowledge in the social sciences sometimes requires the exposition of ideas from the perspective of the social entity within an ecosystem at a particular point in time, consequently demanding that the frontiers of current knowledge held by academic authorities be questioned by people, even by students (Beaton, 2010). However, the 'power distance' syndrome hinders some Asian students from expressing their thoughts in the classroom, especially if contrary to the lecturer's, as this might be perceived as disrespectful (Hofstede, 1998).

This study is structured around one main question: Has the application of whatsapp mobile messenger in your unit course reduced the power distance (cultural barrier) between you and your tutor (lecturer)? A qualitative research investigation via WaMM was conducted with students in business ethics, communication in business, tourism, hospitality and marketing. Findings indicate that WaMM is an effective innovative approach to communication for tutors and students, thereby reducing the power distance. We suggest that the WaMM application in teaching and learning boosts students' motivation to study, work together as a team, and excel.

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VR and AR in the classroom: So what?

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In 2013, Oculus sent out their first head-mounted displays (HMDs) and, in addition to that, initiated a new area of visualising content and redefining the interaction with the environment. The passive role of observation changed to an active role with a high degree of immersion into the experience. The technology successfully gained recognition for its opportunity to attract curiosity across broad socio-demographics; however, the interest was focused on entertainment with games and short experiences. In addition, the predicted value for its application in the classroom and online teaching never came close to its expectations.

In this presentation, we briefly introduce the state-of-art regarding virtual and augmented reality technology using short examples and scenarios. We then start a dialogue with the audience to share our experiences on some best-integration opportunities to demonstrate the value of the technology, but also to support educators in learning more insights.

The focus of this presentation is set on HMDs; however, the *Hololens* by Microsoft re-initiated AR technology, allowing the combination of real and virtual environments and, therewith of interest as a supplement or addition to the virtual reality enhanced learning experience. While the time-constraints of the presentation do not allow hands-on experiences, we supply various examples and scenarios of how the technology is and can be used – still keep asking: SO WHAT? Is this all, or can we expect more in the education sector?

Co-creating the flip: Students and academics collaborating to improve learning

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Student involvement in teaching and learning in Australia has focused on students as consumers, the recipients of universities' educational offerings. Their capacity to influence learning is typically either through student representation on relevant committees and the feedback they provide through anonymous questionnaires. Internationally there have been moves to embed student leadership for learning and teaching and there is evidence to suggest that Australia maybe following suit. The Office for Learning and Teaching project *Student leadership in curriculum design and reform* (2015) argues that student engagement is essential for universities to manage the challenges associated with growing enrolments and student diversity, increasing educational costs and market competition. This presentation will tell the story of an education research project—jointly co-created with undergraduate students—that aimed to investigate what can be done to better engage students in the flipped classroom to ensure they complete preparatory activities. In partnership with the Guild, six students from across the university were recruited to participate as active co-creators for all aspects of the research; the presentation will focus on the experiences of students and staff through the collaboration as well as what was learnt from both perspectives. The presentation will be of relevance to academics and students interested in how they can meaningfully collaborate to jointly lead curriculum innovation and reform.

3D printed specimens for learning anatomy: A pilot study comparing 3D printed models with traditional cadaverous materials

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Three-dimensional (3D) printing is a modern technique of producing 3D-printed models of human structures from MRI and CT scans via fusion of multiple layers of resin materials. 3D printing offers a wide range of advantages over traditional cadaverous materials (wet and plastinated materials). The introduction of 3D models in anatomy curriculum overcomes many problems associated with the use of cadaverous materials such as ethical, legal and religious issues towards the use of human cadavers, costs associated with preservation of materials, and safety of staff and students exposed to embalming fluids. A pilot study (project approval HRE2016-0268) was conducted with Curtin undergraduate students to investigate the use and quality of 3D models for anatomy learning, compared to cadaverous materials. The study consisted of a pre-test, exposure to test (anatomical test) and post-test survey. Participants were exposed to 3D, wet and plastinated specimens of the heart, shoulder and thigh (anatomical test) to identify the pinned structures. Participants were provided a post-test survey paper containing 5 questions. Twenty-three participants completed the anatomical test and post-test survey. A large number of participants (85%) gave correct answers for 3D models compared to wet and plastinated materials, 74% of population selected 3D models as the most usable tool for identification of pinned structures, and 45% chose 3D models as their preferred method of anatomy learning. The findings from this preliminary study suggest that 3D models benefit student learning of anatomical structures, and have the capability to replace and/or supplement human cadaverous materials.

Augmented reality and ultrasound: Innovative methods of teaching physiology

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Research on the use of ultrasound in medical degree courses has indicated that students experience difficulty in generating ultrasound scans and operating the machine 'knobology', even when a demonstrator assists. This study evaluated whether augmented reality (AR) applications could ameliorate these student difficulties and trialled a new pedagogical approach to teaching students about blood flow.
An AR mobile application, *UltraReality*, was developed to facilitate the use of Doppler ultrasound and enhance student understanding of blood flow physiology and pathology. Seventy-five first year medical students enrolled at The University of Western Australia participated in a two hour active ultrasound session on blood flow physiology and pathology. Fifteen sessions were conducted, with a control and experimental group design. Seven groups were given a lab manual on a tablet and eight groups were given the AR app on a tablet. A pre-test and mobile technology survey was administered at the beginning of the study. To evaluate learning outcomes, a post-test was administered, followed by a post-intervention satisfaction survey and a cognitive load scale. Participatory learning, collaboration and efficiency were more pronounced in the AR group compared to the control group. Greater engagement with course material was also observed in the AR group, and the time taken to generate a Doppler waveform and measure vessel diameter was significantly less compared to the control group. The results of this study have ramifications for the implementation of ultrasound sessions and the use of AR and mobile-enabled tools at universities.

Exploring data science complexity and analytics

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This presentation will engage participants in a discussion about data science research methods and applying those to learning analytics. The session will address how concepts of complexity and systems thinking in exploratory analytics is a game changer for research methods in the social and behavioural sciences. The presentation will address key questions of the emerging field of learning analytics, such as: What is data science and what do we mean by learning analytics? What is the current state of the field? What are the major challenges of learning

analytics ethics, data processes, methods of developing insights, and options for infrastructure? Where else in higher education leadership (beyond learning and teaching) are people using data science methods? How can data scientists in higher education build teams and engage researchers and practitioners in creating learning analytics systems? What are leaders in the field currently working on and what are some of the near-term possibilities?

Blended learning: An account of changing the status quo

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Using change management frameworks including Lewin's force-field model and Kotter's eight-stage process, the paper presents a narrative account of the driving and restraining forces of adopting blended learning in a business school setting. The difference between barriers and success factors for change, set in the context of the adoption of educational technology as a learning platform in academia, is discussed. The process of educational change and its impact on educator needs is explored. It is concluded that the project framework, while meeting the needs of early adopters, lost impetus with the educational mainstream – those whose participation was needed for a successful culture shift. The paper sets forth several recommendations which focus on understanding how the needs of the mainstream moderate and motivate educational change programs. These recommendations have implications for institutional leaders and ultimately the propensity for academics to adopt and integrate new ways of teaching and learning.

Reconciliation via the re-creation of *Professional Learning* into the online environment

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Previously, the central teaching and learning office at Curtin University (now Curtin Learning and Teaching) delivered an introductory module about Aboriginal and Torres Strait Islander people and culture. This module was created and delivered by staff of the CAS and CLT who had worked together for several years to deliver a face to face workshop that complements other professional learning in the intercultural space. To move some of this content into an online mode relevant to staff not only in South-west Western Australia but anywhere in the world, the material has evolved into a short introductory module as a pathway. This presentation will consist of an overview and samples of the material in the module to be offered from 2017.

Student perceptions of a lecturer's use of business simulation games

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Teaching in the classroom is more challenging today. Educational technology has changed the landscape in teaching and learning, and business simulation games are becoming popular among lecturers and students at the university. Students are increasingly looking for ways to be engaged, either inside or outside the classroom and combining with their modern natural aptitude for the digital environment. There are several reasons why the business simulation games have become increasingly popular as a tool for teaching and learning. Students not only learn the theory of business, but also to translate it into a more practical way. Such games can improve students' knowledge retention, decision making and teamwork skills. Lecturers may run business simulation games in any format, classroom-based, blended or online, to enhance student involvement of students and create excitement in learning. The main objective of this paper is to study student perceptions of the lecturer's use of business

simulation games for teaching and learning. Overall, the students are very satisfied with the use of games, especially in the classroom. Students feel that the use of business simulation games in teaching and learning, particularly in the classroom is much more interesting and enjoyable. The lecturer's presentation is more attractive, especially as it explores many real business issues and facilitates feedback.

Mash it, quote it, attribute it: Academic integrity, copyright and quotation in non-text media assessment

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When a student grabs an image here, a sound-bite there, and then adds them to an assessed non-text work, do they understand where the line lies between quotation, plagiarism and illegal re-use? The difference between these? Do we as educators? If student assessments involve digital objects like images, audio files and movies, how do we make sure they are effectively demonstrating engagement with disciplinary non-text 'literature' and are supporting their ideas with authoritative disciplinary sources? What do we tell them about the relationship between copyright, citation and non-text media? What can we do to ensure that we, as assessors, actually understand this?

If we are to facilitate digital fluency for our students, then our assessments need to involve submission of non-text media. Generally academics have a very solid grasp on quotation, copyright and academic integrity for text assessments, but do we let students down if we avoid setting non-text media assessments because we cannot transfer this understanding away from text? Digital objects are consumed independently of accompanying text, so an accompanying reference list will not do, nor will reading out fully-formatted APA6-style citations within an audio report. This session presents examples from professional experience, both as a university lecturer and as an academic librarian. It also shares some challenging case-studies that still have me scratching my head.

Enhancing critical reflective practice in first-year students

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Critical reflective thinking – the capacity to challenge one's own assumptions and those of others in order to enhance one's learning and professional practice (Mezirow 2000) – is highly valued in universities as a tool for lifelong, transformative learning. While a large number of undergraduate courses at Curtin and worldwide include reflective writing assignments, there seems to be very little emphasis on teaching students how to write reflectively. Beginning tertiary students generally reflect at rudimentary levels (King & Kitchener 1994), and need ongoing support to deepen their reflective thinking. The Academic and Professional Communications (APC) unit at Curtin University seeks to develop the critical reflective thinking of first-year students by providing targeted tutor feedback on two early pieces of reflective writing. This informs students' later reflective writing in APC, and can provide a strong springboard for ongoing critical reflective writing.

This paper arises from a Curtin TASS grant that allowed us to explore the influence of the targeted feedback provided by three tutors in the APC unit. In this presentation we will show examples of feedback from tutors, which they targeted specifically to each student, prompting them to question their own statements further. We will also show some student writing; while their first pieces were almost universally non-reflective, in their second pieces and their final assignments they were beginning to question assumptions, and to reflect on their studies and their own lives. These first-year assignments demonstrate moments of transformative learning and self-awareness.

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Democratising teaching and learning through weblogs

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This paper focuses on the advantages of an interactive blogging assignment that engages students in the co-creation of their teaching and learning experience. A comparison against traditional written and oral assignments is supported with two years of survey data from units that employed blogging for assessment while using *UWA Blogs* (University of Western Australia's own weblogging platform). Blogging has long been used successfully in education to engage students in interactive learning and improve their overall performance and comprehension (Churchill, 2009; Sankaram & Schober, 2015). Less attention has been paid to the role of weblogs in affecting the process of teaching and learning. Here, the process of teaching and learning is defined as the pedagogical interaction between students, teaching and administrative staff and other stakeholders, as well as the teaching and learning material created before, during and after the life of a unit.

While traditional assignments tend to be characterised by bi-directional interaction between students and teachers and the use of teaching material designed before the commencement of the unit, weblog assignments feature multiple-stakeholder network interactions and student-generated teaching and learning material. Increased student satisfaction with learning and a more dynamic and engaging curriculum are some of the main benefits of using weblogs as assignment tools.

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Improving business courses: The contribution of a Unit Appraisal Survey

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As the Curtin Business School Learning and Teaching team looks for more effective and sustainable strategies across the faculty, the Flexible Learning Engagement Team have undertaken a review of the current status of CBS units, using a *Unit Appraisal Survey*. The UAS instrument was developed to explore the current condition and status of CBS units across all schools using a self-assessment approach, undertaken from the perspective of the currently appointed unit coordinator. The instrument was designed to incorporate a number of contemporary learning and teaching dimensions that the coordinators could respond to:

- the QILT elements (Quality Indicators for Learning and Teaching), that includes teaching quality, learner engagement, learning resources, student support, and skills development;
- themes from the TPACK framework, that looks at the interplay of three forms of knowledge: content (CK), pedagogy (PK) and technology (TK); and
- the inclusion of other specific learning and teaching related dimensions including personalised and adaptive learning, student feedback and professional development.

While many of the responses were questionable, i.e. many reported 'substantially developed' or 'best practice' to the survey questions, there are a number of insights to be taken from the project. These will be presented as part of the discussion, and include aspects of professional development, student engagement and teaching.

Online student engagement in public health higher education: Standards of excellence and evaluation of pedagogical implementation

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Online student learning in higher education presents ongoing pedagogical and theoretical challenges. The *Re-constructivist Online Community of Inquiry* (ROCI) model (Nicolson & Parsell, 2012) and the *Standards for Online Education* (SOE; Parsell, 2014) have led to some national direction in Australia for quality online education. What standards of excellence may look like and evidence of pedagogical success has yet to be articulated within a standards framework. We explored the ROCI and SOE approaches and related literature with an aim of defining standards of excellence specific to online student engagement. Attributes key to excellence were having student-centric online mediums that are supportive of learning objectives, readily available and accessible, and conducive to the socially negotiated and (re)constructed process of knowledge generation. After an international external review of the suggested standards, an evidence-informed pedagogical practice (*Facebook*) was developed and implemented in two units across differing fields of study, one a science based unit containing fieldwork and the other a workshop based health promotion unit.

Evaluation examined constructs related to our defined 'standards of excellence' and included enjoyment, ease of use, convenience, perceived impact and engagement, comparison to the more commonly used *Blackboard* learning management system, and overall student recommendations. Across all dimensions, a majority of students in both units positively endorsed *Facebook*. Additional qualitative data generally supported the use of *Facebook* with some caveats. The results of the project provide evidence to support the theoretically derived standards of excellence in online student engagement, as well as preliminary data to support specific pedagogical methods for achieving excellence. The project presents pragmatic work and will stimulate discussion on the direction of standards and their related practices in the context of public health higher education.

QR codes embedded in a university human biology unit manual: Student perceptions and behaviour

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QR codes, optical tags that can be deciphered via smartphones or tablets with built-in cameras, were embedded in the semester 2, 2015 UWA first year human biology unit manual. These facilitated time and location independent access to online video and other visual resources in the immediate vicinity of the print version. Following the last QR code activity, 585 students were surveyed and of the 72.5% who confirmed using QR codes during semester, 56% reported QR codes linking to helpful digital resources. Whether or not students reported QR codes linking to helpful resources was influenced by where and for what purpose they were used. Reasons why students didn't engage with unit manual QR codes related mainly to personal preference and device issues.

Student survey feedback and the various technical difficulties encountered in 2015 led to modifications in the way QR codes were used in the 2016 unit manual, the way QR codes were designed, and the material they accessed. In 2016, a dedicated *YouTube* channel, HBIOL@UWA, was used to host the QR code video resources. Although this channel is public, *YouTube* analytics allows for videos to be analysed, singly and collectively, by country, timeframe, devices, operating systems, gender and age categories. The *YouTube* analytics revealed that video length was strongly correlated with percentage viewed and that mobile devices, which may equate with QR code use, accounted for about 30% of views overall. The most notable trend in this cohort, however, was that females accessed these digital resources consistently more frequently than males.

Tutor influence on the in-class use of QR codes in a university introductory human biology course

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Quick response (QR) codes are 2 dimensional bar codes that can be deciphered by smartphones and tablets with built-in cameras. In semester 2, 2015 QR codes were used during some tutorial sessions in a UWA first year human biology course to guide students in applying knowledge, identifying knowledge gaps and orchestrating increased opportunities for discussion and peer learning in the form of small group extension exercises. QR codes were also used with complex anatomical models to reveal a sequence of focus questions

designed to guide students to navigate collaboratively through anatomical models and relate structure to function.

Following the last of the QR code activities, short surveys were distributed to students and tutors. Of the 585 students surveyed, 72.5% reported using QR codes during semester and more than 50% of these reported that in class use of QR codes highlighted knowledge gaps. Qualitative analysis of comments suggested that students required more tutor guidance for the relevance of these activities to be appreciated. Ten of the cohort of 16 tutors provided survey feedback on their perceptions of student individual and collaborative behaviours during in class QR code activities. Tutor feedback broadly corroborated patterns of student feedback. Analysis of student reports of whether or not tutors encouraged them to use QR codes revealed that tutor behaviour and attitude significantly influenced student engagement. The findings suggest that for technology such as QR codes to be universally sampled by students, tutors need to be thoroughly convinced of pedagogical purpose and potential benefits to learning.

The rising tide lifts all ships: How private higher education providers can contribute to innovative curriculum design and teaching practices

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Private Australian educational institutions now have an opportunity to offer higher education programs, which is a space that historically has been occupied only by universities. The demand for unique, original, higher education learning experiences within Australia will continue to be an attractive pursuit that is particularly appealing for international students. The challenge (and opportunity) for private providers is to offer robust higher education courses that are at least equivalent to the learning experience that students would attain if they were studying at a domestic Australian university. In this paper, two former university faculty members (who now work within the private college), provide insights from their experiences and reveal strategies that are being used to ensure innovative curriculum design and teaching practices are paramount in all decision making. This paper specifically explores the following areas:

1. Global collaboration with an award winning 'expert discipline provider' in order to gain advisory input and review on the course structure development while also incorporating best practice teaching and learning initiatives.
2. Deliberate network partnerships formed with industry and professional experts who now serve as mentor advisors overlooking proposed content and delivery processes.
3. The use of expert independent reviewers to provide objective, unbiased feedback and guidance that helps shape the curriculum design.
4. Prudent selection of Academic Board members and Course Advisory Committee members with a rich history of teaching and learning scholarship, empirical evidence through experience and a strong passion for education.
5. Investment in the creation of flexible and easily accessible learning spaces.
6. Working cooperatively with Government regulators to ensure that the higher education courses being pursued are fulfilling a demand niche.
7. Continuous benchmarking of any proposed course with all higher education providers (HEPs) who have similar offerings.

The aim of this paper is to provide insights into a process that is relatively new for private providers that are seeking higher education approval in Australia. By revealing lessons learned through the teaching and learning lens, the belief is that the HEP approval process can be demystified and competitive barriers between universities and private HEPs can also be reduced.

Podcasting to a FIFO workforce: Meeting the needs of resource-industry-based students *

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A podcast was introduced as a supplementary teaching strategy for an online Occupational Health and Safety (OHS) unit at Edith Cowan University. The podcast consisted of interviews with experts from the OHS field as well as an audio version of the learning module notes as

read out by the lecturer. The podcast sought to address the needs of students who work in the resources industry and on fly-in/fly-out ('FIFO') roster arrangements. It was anticipated these students would benefit from the option to study on-the-move and whilst multitasking, and to decrease the sense of isolation commonly experienced with online education.

A survey gathered perceptions of the podcast and preferred methods of consumption. Overall, respondents were satisfied with the podcast and wanted more units to include them. There were mixed results concerning the way students consumed the podcast. While some respondents listened while performing an unrelated task (i.e. commuting, exercising, etc.), the majority listened during dedicated study periods. This finding supports other studies that found students prefer to use audio learning materials simultaneously with written materials and during specific times set aside for study.
** This presentation is available also as a poster.*

"There's got to be an element of initiative when you are at university": University students' attitudes towards learning analytics

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Learning analytics in higher education institutions are being explored to predict and understand student learning behaviours, and reduce student attrition. Learning analytics can provide personalised feedback and support within the education setting. The widespread technical development and exploration of learning analytics has outpaced the consideration of potential ethical issues surrounding the use of learning analytics. Of particular concern is the absence of the student voice in decision-making about learning analytics. We explored higher education students' knowledge and perceptions about learning analytics through four focus groups with 41 students. Six themes emerged from a thematic analysis of the focus group transcripts. The first theme, 'Uninformed and uncertain', represents the students' lack of understanding about the concept of learning analytics. Following the provision of information, viewing of videos and discussion of learning analytics scenarios, further themes emerged including; 'Help or hindrance to learning', 'More than a number', and 'Impeding independence'; which represents students' perceptions of the likely impact of learning analytics on their learning. Other key themes, 'Driving inequality' and 'Where will it stop?' represents the ethical concerns raised by the students about the potential for inequity, bias, an invasion of privacy, and the need for informed consent within a learning analytics system. Throughout the themes a tension emerged about how 'personal' versus 'collective' purposes can intersect with 'uniform' versus 'autonomous' activity. The findings highlight the need to engage students in the decision making process about learning analytics.

Investigating the effects of diagnostic tests and preparatory material on retention and results

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One of the challenges for many educators working in higher education is the diversity in student educational backgrounds, and hence the variation in underlying skills and knowledge. This is particularly true for mathematics units as well as for pathways units that do not have prerequisites, and the UniReady Enabling Program's *Applying Mathematics* unit fits into both of these categories. As a way of addressing this issue a short mathematical diagnostic test and additional preparatory material have been incorporated into the unit, and anecdotal evidence from students has so far indicated a positive effect.

However this presentation attempts to investigate more thoroughly the effectiveness of these measures on improving student results and retention rates, by studying data from both semesters of 2016. Relationships between variables, including diagnostic test completion status and diagnostic test results, final marks and final grades and withdrawal status, will be analysed and observations will be discussed. In particular comparisons will be made between results for fully online and internal students, in a bid to identify the most effective way of helping both groups of students achieve to their maximum potential.

Intrapreneurship and partnerships to innovate learning and teaching

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The need for universities to become more entrepreneurial in order to innovate in an increasingly global market is well known. However, the concept of *intrapreneurship* driving innovation from within is much less known, despite emerging in the late 1970s. Broadly speaking, an entrepreneur is an employee who embraces the characteristics of entrepreneurship but works across sectors, business units and skill sets *within* existing systems, to innovate and solve problems. Although intrapreneurship is widely recognised as playing an integral role in the success of many large companies and organisations, there is very little literature offering similar perspectives upon intrapreneurship in universities. This presentation explores the idea of university staff as entrepreneurs collaborating across faculties, disciplines and interest areas, together with the role of partnerships as genuine two-way engagement processes influencing learning and teaching design and practices in powerfully creative and innovative ways. A case study in the ideation stage is discussed to demonstrate the entrepreneurial approaches and the integrated nature of cultural and tertiary partnerships in building cultural awareness and sustainability through learning and teaching. It explores how two international universities hope to partner and exchange digital visualisations of cultural artefacts through augmented reality 'wormholes' within large-scale public art murals.

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55 minute workshop
Work-integrated learning: Thinking beyond the placement

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This workshop aims to identify a range of work-integrated learning (WIL) models which encompass the underlying principles of a quality WIL experience and meet the needs of stakeholders who are looking beyond traditional work placements. It is increasingly important for practitioners to explore scalable and sustainable WIL models, other than traditional work placements. There is an increasing shift towards embedding WIL in higher education curriculum to ensure work-ready graduates. The requirement for degree programs to provide a WIL experience to all students is reflected in employer expectations and the Higher Education Standards Framework. The resource intensive nature of securing quality work placements for all students means that universities need to look to other forms of WIL where students gain meaningful and authentic exposure to the professional setting. Students are increasingly realising the worth of relevant WIL experiences to improving their employment prospects (see, for example, Graduate Careers Australia, 2015) and are keen to participate in WIL. In particular, access to WIL experiences are an important factor in study destination choice among international students (International Education Association of Australia, 2012). Some students, however, are unable to participate in work placements due to costs associated with clothing, travel and childcare (Bates, 2005). Some may not meet the prerequisites to qualify for a work placement, such as required course average, while others may be located regionally where work placements are not supported. Creating sustainable models of WIL which support student learning and prepare students for the realities of the world of work are imperative with the growth in student numbers and student diversity.

The workshop will provide a very brief overview of the need for innovative WIL models to meet stakeholder needs. Participants will review and discuss the key elements which any quality WIL experience must encompass. The facilitators will then provide a brief introduction to some innovative models of WIL, beyond the traditional work placement. This will be followed by participants working in small groups to identify innovative models which may work in their own discipline area. Participants will consider intended learning outcomes of the WIL experience; how the achievement of learning outcomes will be evidenced; how the WIL model may be resourced; what partnerships (internal and external) are needed to make

the model possible, scalable and sustainable; and how will they be established/maintained will be considered. The workshop is intended for practitioners involved in WIL from across disciplines, in particular those where alternative models of WIL are feasible (rather than only placements/internships/practicums required for accreditation purposes). New practitioners to WIL would be very welcome to attend.

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Implementing work-integrated learning in science

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Work-integrated learning (WIL) is a key vehicle for developing the employability skills and knowledge of graduates, and for improving engagement between industry and universities. Recent national studies show uptake and delivery of WIL in science and mathematics is poor in comparison to other STEM (science, technology, engineering and mathematics) disciplines (Edwards et al., 2015). The need to implement and extend WIL in science has been recognised by the Office of the Chief Scientist and the Australian Council of Deans of Science, and aligns to the national WIL strategy announced by Universities Australia in collaboration with the Australian Collaborative Education Network and peak industry groups (ACEN, 2015). Here we report on the *WIL in Science* project which seeks to establish visible WIL organisation and leadership in science-based faculties and to generate peer-to-peer learning for partner organisations. Our initial work shows science faculties are at very different levels of readiness, ranging from a position of little or no systematic adoption of WIL or enabling strategies, through to faculties with significant investment and support from their institution. We will share knowledge and case studies generated through faculty planning workshops and the implementation of action learning projects at six Australian universities. We will use these 'lighthouse' projects to illustrate enablers and a framework for implementing and upscaling WIL in science and other generalist degrees.

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I'm not ready: Student perspectives of their preparedness for professional accounting work *

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Graduate work readiness is a topical but contested construct challenging accounting educators and employers alike. Professional accounting work comprises diverse roles and tasks across multiple specialisations and sectors, and understanding and navigating this complex labyrinth is challenging for newcomers. Research shows that students' (mis)conceptions of accounting work are an important influence on how well they transition into professional employment. This study surveyed 221 current accounting students in one university across two campuses in Australia and Singapore to investigate their understanding of the accounting industry and perceptions of their work readiness for this sector after graduation. The results suggest that a significant number of students do not understand the diverse nature of accounting practice,

nor do they rate their overall work readiness very highly. With few students working in the accounting industry while studying, and limited opportunities for authentic work place experience throughout an accounting degree, the outcomes of this survey implies that generalist accounting degrees, currently the hallmark of most Australian universities, may not adequately prepare graduates for the range of professional roles they will encounter upon graduation. Prescribed curricula for accreditation and a lack of engagement by employers combined with narrowly constructed and decontextualised technical knowledge mean students potentially leave university with no real understanding of the behavioural implications of accounting, nor how the diverse knowledge domains studied at university, connect to practice. These findings have potential implications for accounting graduate work readiness and the transition to professional practice and highlight the need for further research in this area.
* *Full paper on website*

Should calculators be allowed in university mathematics units?

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Traditionally, mathematics units do not permit the use of calculators, especially at the first year level, and particularly for introductory or low-level courses. This study is on a low-level mathematics unit, covering algebra and introductory calculus, which has previously not allowed calculators. We were interested in finding whether allowing calculators would affect the performance of students. In semester 2, 2016, we allowed the class to use any calculator on the standard list of calculators permitted by the university. Student performance data, along with demographic information such as ATAR, high school mathematics mark, gender and weighted average mark, were collected for students from 2015 S1, S2, and 2016 S2. The data were analysed to determine the effect of calculators on performance. In addition, surveys of academic staff and students were taken to ascertain the attitude of each toward calculators. A qualitative and some quantitative analyses of the resulting data were undertaken.

This is ongoing work and all the data is not yet available, but we will report results at the Forum, and address the question: What is the effect of calculators in first year mathematics units? We will further discuss the implications of our findings for the use of calculators in university mathematics.

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Presenting the neuroscience underpinning mindfulness programs in tertiary education

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There is currently an unprecedented increase in the incidence of anxiety, depression and suicide among students. A study conducted at Monash University found that 73 % of medical interns met criteria for psychiatric morbidity on at least one occasion. There is abundant evidence that high levels of stress are perceived by students in present society and the inability to manage study loads, combined with information overload from the internet, contributes to perceived stress.

Supporting students to develop self-renewal skills, build resilience and enhance performance, in order to manage the challenges of tertiary education, is crucial. This paper explores 'Mindfulness', which can be defined simply as a mental discipline aimed at training attention. Mindfulness training has been offered as an approach to address the harmful effects of stress and consequently, to manage anxiety and depression. Dealing with the surfeit of information

that is required of students necessitates multi-tasking, which paradoxically, has resulted in a reported average human attention span of only eight seconds. This deficiency of attention directly contributes to a lack of wellbeing. During mindful practice, fMRI studies show activation in the areas of the brain that regulate working memory, executive function, self-monitoring and cognitive control. They also show a down-regulation of the amygdala, or 'fear' centre which directly contributes to the stress response. Several schools of medicine in Australia already run mindfulness programs and these studies provide convincing evidence to support the incorporation of mindfulness programs into other undergraduate courses.

Teletandem: A virtual transformative experience in language learning

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Collaborative and communicative approaches prevalent in language learning and teaching can be effective and successful when they incorporate authentic and autonomous experiences. With today's technologically interconnected generation of learners, *Teletandem* offers an innovative and resource-efficient way of enhancing the quality of language teaching and learning in higher education. This presentation will report on a dynamic and engaging project that has run recently in the Faculty of Arts at UWA. It consists in pairing up UWA learners of French with learners of English at the University of Lille in France. Through pre-established activities, online collaboration tools and by writing their experiences in a self-reflective diary, students share their own language and culture, negotiate language use, contribute to their peers' learning and reflect on their intercultural and inter-language learning. It intends to enhance language and cultural competencies with authentic, supervised but autonomous learning that connect UWA students to the real world allowing them to be immersed and engaged in a global context. This paper will focus on the reception and evaluation of the project and how it can be fully integrated into the French studies program and other language programs.

A study on student motivation level and performance in a flipped classroom

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Flipped classroom approaches replace traditional lectures with pre or post classwork and active in-class learning tasks. Although much popularity is associated with the flipped classroom approach, there is limited evidence of its effectiveness towards the improvement in student motivation or performance. This study investigated student motivation level and performance in a *Foundation Engineering Physics* flipped classroom. Six factors of motivation, namely self-efficacy, performance goal, achievement goal, learning environment stimulation, student interest and perceived learning were studied on high, medium and low achievers. Motivation levels in terms of self-efficacy, performance goal, achievement goal, learning environment stimulation and student interest were highest among the high achievers. The level of perceived learning was found to be highest among the low achievers. Approximately 92% of the low achievers improved from credit to at least a merit and 57% of the medium achievers improved from merit to distinction in their overall performance. Students ranked the online learning videos as the most useful aspect of the flipped classroom, followed by in-class activities (small class); while learning activities conducted in large classes ranked last. Based on our findings, we propose that the use of in-class activities and homework were critical motivating aspects of the flipped classroom approach that likely contributed to good student performance. Our experience with a version of flipped physics classroom was largely positive and the findings support that flipped classroom is an effective approach which educators could adopt for the teaching of physics and possibly other science, technology, engineering and mathematics (STEM) courses.

Identification and characterisation of interactions transferable from physical to remotely controlled engineering laboratories

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Laboratory work is a fundamental component of the engineering curriculum. Studies of engineering laboratories reveal that existing physical laboratories could be enhanced and that remote laboratories are envisioned to be an important alternative in an era of high enrolment numbers in engineering degrees alongside institutional cost constraints. Students performing laboratory experiments essentially interact with the equipment, fellow students and instructors. Understanding the nature of these interactions will result in the robust design of remote laboratories which can more flexibly serve larger cohorts of students irrespective of their location and abilities. To enable the transition from physical to remote laboratory modes, the present study will answer the following questions:

1. What are the types and nature of interactions in both physical and remote laboratories?
2. What is the relative importance of the interactions in physical laboratories that should be incorporated in the remotely operated laboratories?
3. How do these interactions contribute to students' attainment of the practical skills necessary to be a professional engineer?

The answers can be obtained by first identifying the interaction types in a physical laboratory through direct observation, surveying students and analysing audio/video recordings and then assessing their contribution to the learning processes involved in experimental work. A similar study will be conducted for remotely operated laboratories. Students' achievements from both laboratories will be compared in order to shortlist the most significant interactions that must be incorporated in the newly proposed design of remote laboratory for the future.

Motivational interferences in first year students

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Student engagement and motivation are important issues, especially in the first year of study at university. First year students are susceptible to motivational interferences from a variety of sources including friends, family and work. There is evidence that these sources of interference impact differentially on engagement with various forms of learning (e.g., online and face to face lectures and tutorials and home study). Reversal theory (Aptor, 1982) suggests that goal conflict is likely to underlie motivational interference. Reversal theory emphasises the complexity and inconsistency of behaviour, positing that people reverse between psychological states depending upon the meaning and motives felt. This can be influenced by (1) environmental events and situations, (2) frustration in achieving the preferred levels, and (3) satiation. We explore these issues and discuss how blended learning, co-creation and choice might be used, in order to increase student motivation and engagement.

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55 minute workshop
Teaching and learning with apps

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The potential for digital technologies to support innovative teaching practice and transform the student experience is undeniable, but these technologies are evolving at such a rapid rate that higher education has struggled to keep up, often restricted by the limitations of centralised IT support and resourcing.

If educators are to fully grasp this potential they need to strike out on their own, to develop a skill set that makes them independent, able to scan, evaluate and match the best available technologies with their own personal set of learning and teaching goals. Educational apps are a case in point and there are literally thousands of small, specialised programs on the market offering an overwhelming range of affordances. But where do you start? How do you know what's out there? How can you select the most effective tools to support your teaching?

In this practical, hands-on workshop we aim to help you develop strategies for identifying and choosing the best educational apps to meet the needs of your teaching practice, developing your knowledge and skills in the application of digital technologies and the mobile devices that support them. During the workshop we hope to demonstrate the:

- importance of pedagogically driven technology selection;
- benefits of employing educational apps;
- process of identifying and matching learning and teaching goals with available educational apps;
- effective evaluation and selection of educational apps; and
- value of learning and teaching networks as a source of information and support

The aim of this workshop is to build confidence to engage with technology, to explore what it can offer and exploit its potential. Workshop participants will get the opportunity to:

- discuss and share their own experiences using educational apps;
- learn more about the affordances of educational apps and how they can be used to enhance and innovate learning and teaching;
- access and review popular educational apps in the context of their own teaching;
- explore popular learning and teaching networks;
- learn about and practice the skills necessary to search for and evaluate educational apps

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Work not shared is invisible: Connecting student learning in science by building 21st century literacies

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Scientists today are expected to not only practise in their disciplines, but also to make scientific knowledge publicly available in an accessible form. In the biological sciences a number of public platforms have emerged to support the sharing of scientific knowledge – platforms that go beyond traditional scientific papers, research posters and oral presentations, to include production of digital keys for species identification and materials designed specifically for the non-expert general public. The skills necessitated by this shift have been recognised for almost two decades under the banner of '21st century literacies', yet many contemporary learning and assessment tasks in science do not tackle them head-on.

In this presentation, I will describe how I have designed and implemented assessments that build 21C literacies in biodiversity science at tertiary level, and discuss the philosophy that underpins my approach. The assessments use global, open-access tools – such as the European Union's *Scratchpads for Biodiversity* platform and the Australian Government's *Atlas of Living Australia* – to produce concrete products that are publicly available and contribute to plain language biodiversity information. I also consider impediments to the wider implementation of this approach to student learning, and how overcoming them can enrich not only students' learning but also the user and developer communities.

A Health and Wellness plan with mindfulness activities to reduce stress in Speech Pathology students

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Undergraduate health students often have increased stress levels as a result of juggling the completion of studies, clinical placements, work and social commitments. Would a focus on health and wellness with mindfulness strategies support students to manage their stress levels more effectively? There has been a dramatic increase in the discussion about and use of mindfulness strategies in recent years. Mindfulness strategies are being incorporated into the

treatment of a range of mental health and chronic health conditions, as well as in primary, secondary and tertiary education settings. In a third year clinical practicum unit at Edith Cowan University students were introduced to a range of mindfulness activities and encouraged to complete a *Health and Wellness* plan to support their mental health and wellbeing in fourth year. This presentation will describe the strategies introduced to students and the structure of the *Health and Wellness* plan and invite discussion into how, why and when to develop mindfulness in students. Students themselves were positive about the activities and the development of a plan as captured in online questionnaires at the end of semester. Future directions will also be discussed.

Managing participation in online Wiki groups

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The UniReady Enabling program provides an alternative pathway for students from diverse backgrounds to gain entry to Curtin University and is delivered fully online as well as internally. Foundations of Communication is one of two core units of the course, and one of the essential components of the unit is a group assessment conducted over a period of five weeks. Online students use a Wiki to communicate and cooperate with their group members in order to complete the assessment, which can result in a variety of challenges. In spite of these challenges, group work is a valuable learning experience, so it is important to resolve, or avoid, as many of the challenges as possible.

Key changes were made to the UniReady Foundations of Communication group assessment process in 2015 and 2016, to address the known challenges faced by students and tutors. The modifications included changing the composition of the groups by incorporating only those students who had completed the previous assessment. At the same time, opportunities were provided for the remaining students to complete the assessment as part of a separate group. In addition, the management of non-contributing group members during the five-week assessment period was altered to provide fairness for all by removing the non-contributors. This has been carried out in a way that still allows all students to complete the assessment should they wish, but encourages all students to contribute their fair share of the workload. The challenges and strategies employed will be of particular interest to those involved in online courses that involve group work.

Virtual work-integrated learning in engineering

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There is a gap between engineering education and practice. Engineering academics are ill-equipped to bridge this gap because most lack recent industry experience. Recognising the transformative value of workplace learning, Engineers Australia requires that students of accredited engineering programs are exposed to engineering practice. Traditionally, students have undertaken placements in industry. However these are often difficult to secure. Therefore alternative exposure to practice is required.

In this presentation we will outline the achievements of the first year of a three-year project to develop, test, and establish virtual work-integrated learning (WIL) for engineering students. We are developing virtual WIL modules for testing in second semester 2017. Design requirements were refined through consultation at regional forums with stakeholders including engineering deans and associate deans (teaching and learning), students, engineers, and key personnel at Engineers Australia. Virtual WIL will be used throughout curricula and include modules on engineering roles and employability skills using virtual sites and gaming environments for students in the early years, and project-based modules on tendering for students in their final years. Students will work with other students and receive advice and feedback remotely from engineers.

From time to time: A constructivist approach to sociality in learning

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Under the current financial pressures, tertiary education increasingly looks towards the corporate sector to import its model of management and efficiency. While many benefits of this model can be seen in practice, in regard to staff and facilities management and financial viability, its impact on teaching and learning is causing a disruption to the very core of tertiary education, eroding sociality in learning and opportunities for sharing knowledge and values.

Capacity to work in teams and ability to solve problems by collaborating and sharing insights and information, including critical thinking, are skills students are expected to gain during their studies. The development of these skills to their fullest using a *design thinking* approach, however, is currently not widely supported, albeit desirable (Scheer et al, 2012), in the present education context which is addressing the efficiency of time management by reducing contact time, increasing student/staff ratio and shifting towards integrated and mass education modes of delivery. Ability to solve 'wicked problems' as supported by design thinking is becoming more attractive to the tertiary sector as it promotes 'holistic modes of constructivist learning in projects' (Scheer et al, 2012). While this presentation is not disputing the existing model, it responds to its current challenges by proposing a stronger integration of different factors contributing to learning. With this in mind, the aim is to present a collaborative working model as a way of bridging 'the missing link between theoretical findings [on holistic and interdisciplinary learning] and demands by pedagogy science' (Scheer et al, 2012). Such a model is envisioned to encourage sociality in learning and strategise space/time/experience management, ultimately enhancing knowledge and value sharing.

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The role of tutors in collaborative learning environments: Developing tutors' areas of impact

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Collaborative learning environments have potential to encourage peer learning which has been credited to improve students' performance (Boud, Cohen & Sampson, 2014). Evidence exists that group-based collaborative learning has the ability to developing important engineering professional skills in students, such as problem solving, critical thinking, team work and intercultural skills, along with technical skills, if proper guidelines are used by facilitators (Taconis, Ferguson Hessler & Broekkamp, 2001). Tutors, who are main facilitators in collaborative learning workshops, may not necessarily be aware of the impact their role can have on their students' learning. Also, they may not be equipped with adequate guidelines to apply in order to enhance learning in the collaborative learning settings. This paper presents the first phase of a participatory action research (Denzin & Lincoln, 2011) that aims to answer a question "How can tutors/facilitators impact effective learning in multicultural collaborative workshop settings?" In this phase, I wrote weekly reflections, for twelve teaching weeks, on my experiences as a tutor, in one of the workshops that I conducted. The reflections focused on students' interactions in the classrooms drawing from similar studies that suggest interaction as a factor that determines collaborative learning (Arkoudis et al., 2013; Singaram et al., 2011). Analysis of my reflections resulted into themes that were summarised as three 'tutors' areas of impact' where tutors can have influence in collaborative learning environments, namely: development of interactions, peer learning, and delivery. The first phase proposes a methodology for the second phase which will further explore the 'tutors' areas of impact' and will include, in addition to reflections, an observation and a focus group as data collection methods.

55 minute panel session

The Curtin Academy: A strategy for supporting innovation in teaching and learning

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Curtin Academy is an active and honorary network of recognised outstanding teaching scholars, whose aim is to support and promote the recognition and development of outstanding teaching practice. The aim for this panel session is to provide insights into Curtin Academy's vision and mission, its activities, priorities and projects by providing the audience with an opportunity for open discussion with the Curtin Academy members.

The speakers are Curtin Academy members:

- Introduction of panel members, facilitated by the chair (5 min)
- Initial elucidating questions to the panel, aiming to introduce the audience to what the Academy is about and how it is contributing to the broader university community, facilitated by the chair (15 min)
- Showcase of Curtin Academy projects: 'Use of innovation and technology to enhance learning' facilitated by Lisa Tee and Iain Murray (20 min)
- Open questions from the audience (10 min)
- Closing thoughts from each panel member, facilitated by the chair (5 min)

STEM Makerspace: An opportunity for developing students' reflective practice and professional identity

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> Higher education has a responsibility to help young adults make the transition from being shaped by society to shaping society in their role as leaders in society's future (Baxter Magolda, 1999, p. 630).

In order to develop leadership roles in society, undergraduate students need to undergo learning experiences that help them to develop a sense of identity, to define professional goals, seek out supporting learning partners and to articulate their own philosophy for the profession. They need to learn from challenges and mistakes, through reflective practice, to understand the importance of their choices, behaviours and their responsibility for their own learning (King et al, 2009). Such learning experiences need to provide: enough challenge to stimulate complex thinking, appropriate levels of support and opportunity for reflection (Hodge, Baxter Magolda & Haynes, 2009).

STEM Makerspace at Curtin University is an initiative designed to promote STEM education, improve pre-service teachers' work readiness and engineering students' community engagement. A learning environment where pre-service teachers, student engineers, teacher educators and engineering educators work together to conceive, design and create an artefact; an environment that promotes cognitive, interpersonal and intrapersonal development by using three key principles: validation of learners' capacity to know, situating learning in learners and mutually constructing meaning (Baxter Magolda, 1992). This presentation highlights the Makerspace activities and the experiences that provided opportunities for developing students' own identities. The research findings related to how students explore, apply knowledge related to self and STEM career development while reflecting on their meaning-making process, are presented.

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Networked learning: A new paradigm for 21st century higher education?

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Networked learning has been described as a new paradigm for learning and teaching which challenges and attempts to reform the persistent 'transmission model' of higher education, which is based on highly systematised instructional design principles. Networked learning offers an approach to higher education that is developmental. The underpinning theory, pedagogy and practice of networked learning has been developed over the past 20 years by a group of UK and European researchers and practitioners who are interested in taking a critical scholarly perspective on their practice. Some of our work can be explored on our *Networked Learning Conference* website http://networkedlearningconference.org.uk/, and at http://www.springer.com/series/11810 where we have published a series of books on networked learning.

The underpinning theory, pedagogy and practice of networked learning is characterised by several important features that connect with current research on higher education learning, teaching and assessment practice. These are: connectivity; collaborative and cooperative learning: critical reflective learning carried out in a social context; collaborative self-peer-tutor assessment; development of a learning community; students as proactive, engaging agents who are knowledge producers; equality; and collaborative dialogue. The educational focus of networked learning is on process and the development of critical, self-initiating students. Networked learning takes a humanistic perspective on all of this. In this presentation, I will introduce an example of a successful networked learning course and discuss its design features, its impact on student learning and its potential to offer an alternative to instructional design.

Creative mental health simulations in teaching and learning

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Although simulation is a well employed educational strategy in higher education and healthcare, it is not well utilised in the teaching and learning of mental health related concepts. Simulation is promoted as an effective adjunct to clinical experience and to maximise learning opportunities while on clinical practicum. It is highly regarded as a valuable teaching tool and has a positive effect on the clinical effectiveness of students nearing the transition to registered nurse (Milkins, Moore & Spiteri, 2014).

In 2016 a successful Teaching Excellence Development Fund [TEDF] within Curtin University facilitated the development of mental health simulation for use in the undergraduate nursing program. The strategic aim of this project was to embed employability skills into the curriculum by designing teaching and learning strategies which aligned with field work preparation and skills. As part of this project, a series of acute mental health related simulations were developed for use across curricula. Collaboration with clinicians validated the scenarios ensuring authenticity (McGough & Heslop, 2016). This presentation will outline the process of scenario development, including linkage with the Australian Commission on Safety and Quality in Health Care Service Standards (ACSQHC) and graduate attributes. It will also discuss the recent implementation of the simulation activities in the undergraduate program with noteworthy reflections on this phase of the project, and recommendations and objectives to explore its applicability in other curriculums and with industry partners.

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Clinical proficiency training in interprofessional pathology testing using authentic simulation

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Rapid on site Fine Needle Aspiration (ROSE) is a procedure performed regularly in radiology theatres, using ultrasound (US), computerised tomography (CT) and occasionally as an intraoperative procedure in surgical theatres. It is used typically to investigate cases of suspected cancer. Pathology staff attend with a mobile laboratory to provide a provisional diagnosis and optimise specimen handling. They are required to wear sterile over garments to protect self and patient from potential cross infection. Training scientists against the essential activities and adaptational thinking required in these scenarios can be difficult to replicate within a laboratory setting, particularly when clinical techniques are continually evolving. Simulation learning environments have been developed as 'real life' scenarios in other health disciplines and have been shown to bridge the gap between the classroom and clinical setting for student training [1]. This presentation will describe the use of simulation where actors and technical equipment were used to develop students' competency in ROSE and endoscopic bronchial ultrasound (EBUS) procedures. Both techniques are complex multistep processes used in public and private hospitals in Australia and experience in the role of the pathology team is an important graduate competency. The method involved a collaborative approach for patient evaluation and immersed students into the reality of the diagnostic setting. Results from a quantitative pre and posttest questionnaire of students and a focus group discussion following the simulation experience will be presented. Details include the impact of the exercise on the students' self-reported knowledge and diagnostic and technical confidence in this interprofessional setting. The presentation will establish the learning outcomes through developing and delivering the simulation training and will propose potential applications in other biomedical laboratory disciplines. This novel high fidelity biomedical simulation experience was a valuable foundation for providing students with the confidence to bring well-honed technical skills to a clinical diagnostic setting.

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Identifying and promoting best practice in the professional development of demonstrators

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A critical component of science (and engineering) degrees are the laboratory classes. These laboratory classes are also one of the most neglected areas for the professional development of the demonstrators, who are usually senior students (Honours, Masters or PhD) with little or no teaching experience. In response to concerns about the quality of instruction in laboratories, a *Laboratory Demonstrators Professional Development Program* (LDPDP) was developed to enhance the teaching skills of demonstrators. This LDPDP is based on science education research with three principal components: (i) a full day workshop on effective teaching, and an understanding of student learning, (ii) use of a preparation template to highlight laboratory learning objectives, and (iii) short weekly group meetings to discuss upcoming experiments. A key focus of this LDPDP is to develop demonstrators who are proactive in enhancing the positive learning experiences of their students. Feedback from workshop participants over many years has been overwhelmingly positive, and the ideas and resources developed have now been adapted at universities in Australia and internationally. Feedback from students taught by demonstrators who participated in this program provides strong evidence of the educational efficacy of this program.

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The dynamic case study method: A new approach to case studies

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Case studies have long been used to facilitate application of theory to practice in many disciplines. The *Dynamic Case Study Method* (DCSM) developed by Atul Chandra extends the traditional case study approach in new and exciting ways. The DCSM is based on extensive knowledge and understanding of the skills required of successful senior business executives and auditors and has been proven to work in practice for both undergraduate and postgraduate students. The objective is for students to learn a robust decision-making process that can be effectively applied throughout their future careers. The DCSM focuses on changing students' conceptual thinking by engaging them in making decisions for real high-profile businesses, constantly reshaping their views in the light of changing business events and new theoretical knowledge gained during their course. During the semester, students monitor the accuracy of their predictions, consider whether the business made the same decisions they would have made, and discuss the likely impact on the business. Students learn to continuously scan the business environment and incorporate breaking news and events into their dynamic business decision-making process. The DCSM generates robust classroom discussions in which students articulate and debate an ethical and rational basis for business decision-making. The DCSM has potential for adaptation and application across many disciplines.

Reflections on choosing an e-portfolio solution for pre-service teachers

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At Curtin University School of Education, the Student Professional Portfolio Working Party has embarked on a journey to find and deliver an e-portfolio solution for the new Masters of Teaching course due to run in 2017. This presentation will take the audience through our decision-making process and focus on how we ended up deciding on *Mahara*. Of particular interest was the inclusion of the new *SmartEvidence* feature, which we think will be invaluable for our students as they progress through the course and beyond. The *Mahara/SmartEvidence* solution will enable students to collect portfolio artefacts and align them against the AITSL professional standards for teachers [http://www.aitsl.edu.au/australian-professional-standards-for-teachers]. Academic staff are then able to confirm the alignment and offer feedback. We will give a demonstration of how we intend to use *SmartEvidence* in our evidence collection process. The presentation will be an opportunity to have a look at the SmartEvidence Standards Framework functionality, see it in action and ask questions about its features and benefits.

Students' preparedness for the flipped classroom: How do we motivate them?

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The completion of preparation activities is a core component of the flipped classroom, an approach requiring students to learn foundational information in preparation before class, allowing class time to be allocated to tasks requiring higher level thinking (Davis, 2013; Schwartz, 2014). Students' under preparedness for the flipped classroom has proved to have a negative impact on their learning experience (Abeysekera & Dawson, 2015; Freeman, Harreid & Schiller, 2013; Milman, 2012; Mok, 2014). This presentation will describe a unique project which engaged undergraduate students from three faculties as co-creators to generate, structure and answer the research question aimed at exploring why some students prepared for flipped learning whilst others did not. Six students together with three academics collaboratively designed the research project. Data were gathered through a survey of 314 students to gain an initial understanding of the factors that influence students' preparedness

for class; participants for the survey were recruited randomly across the university campus. Students in the research team then observed classes identified as engaging by the survey participants and completed student and staff focus groups to understand why students were more likely to prepare for these classes. Preliminary findings show intrinsic motivations for completing preparation include: self-management skills, interest in their studies and effective course selection. Extrinsic motivation is linked to employment opportunities, their peer group and teaching styles. This presentation will include strategies for improving motivation for preparation tasks for flipped learning as identified in this study.

The transfer of academic writing skills from an English for Academic Purposes (EAP) course to disciplinary writing contexts: The case for discipline-specific writing instruction

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The ethnographic research reported in this presentation adopted sociocultural perspectives, specifically an academic literacies lens, to analyse the transfer of academic writing skills from an English for Academic Purpose (EAP) pathway course offered at the University of New South Wales. The longitudinal study charted the transfer trajectories of a group of non-native English speaker students to investigate the impact of the course on their written academic literacies development; and subsequently, their negotiation of discipline-specific writing tasks in their first semester of postgraduate studies. Overall, learning transfer was found to have occurred in a constrained manner due to individual student, task and institutional factors. The findings also point to the need for new ways of teaching academic writing that take into account the socially situated nature of writing, focusing more on developing students' communicative competence and dexterity in negotiating different contexts, rather than the mere teaching of decontextualised skills. The presenter will discuss the implications of these findings for academic writing instruction within the context of post-entry academic language and learning support offered by university learning centres.

Education as transformation: The Engineering Foundation Year at Curtin University

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The Engineering Foundation Year (EFY) is the common first year of all Engineering courses at Curtin University. From the outset the EFY was conceived as a holistic program offering a balanced combination of foundational contents in mathematics, programming and the sciences, as well as professional skills, social interaction and support. The success of the EFY is manifested in the high progression and retention rates it produces. At the end of the 2015 academic year 98% of students either progressed to second year in Engineering or switched to another course within Curtin. To achieve these numbers the EFY offers the following services to students:

- *EFY Studio*. The studio includes an open office layout for general work, a computer laboratory, several meeting rooms, an open-air terrace, and the Electrical Systems and Mechanics Laboratories.
- *Engineering Tutoring Access Points (ETAPs)*. One-on-one tutorials on each of the Engineering Science and Enabling Skills units.
- *Orientation Day*. The program for orientation day was conceived as a flipped classroom exercise. Students engage in active learning activities to gather information about Curtin, Engineering and the support networks available to them.
- *Conditional Meetings.* One-on-one meetings with each student in conditional status to provide advice on enrolment and identify opportunities for support.
- *Grouping System*. From day one students with similar needs are gathered in groups of 25. Each group shares the same timetable; hence students experience all first year activities together. This scheme encourages social interaction, which is critical to succeed in the first year.

The spirit of the EFY at Curtin is reflected very well in its motto: "Engineering is not something you do, it's something you become".

Articulating knowledge, skills and achievements: Improving student employability

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Australian universities have been under increasing pressure to improve student employability outcomes (Mayer, 1992; Commonwealth of Australia, 2002; Australian Government, 2013). However, despite changes to course design to encompass generic employability skills, continued feedback from employers is that graduate students are not prepared for employment (Lowden, Hall, Elliot & Lewin, 2011). International studies have found that students frequently complete their degree unable to articulate what it is they have learned (Peet et al, 2011). In a survey at Edith Cowan University, students likewise reported feeling less confident in being able to articulate in writing and speaking their knowledge, skills and achievements, when compared to their belief that they would learn what was necessary to successfully enter their profession. To support students in being able to articulate their knowledge, skills and achievements, seven courses at Edith Cowan University are piloting an employability strategy where students are given explicit opportunities to articulate their learning in writing and speaking. Students will be monitored throughout their course in order to examine the effectiveness of this approach. In this presentation, we will discuss the findings of the student survey and how these findings will affect our continuation of the employability strategy pilot.

Interactive teaching and learning: Providing a roadmap when no one is sure of the way

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In the light of poor student attendance at on campus lectures and the current drive toward blended learning, the notion of teaching online versus traditional face to face delivery is challenging to all disciplines. This is particularly so in nursing and midwifery where its practical nature necessitates being able to see, hear and touch others. Following positive feedback for the *Interactive Learning Activity* (ILA) prototype in one unit of study in 2015/2 the School decided to implement ILAs across the undergraduate nursing course. The ILA concept is delivery of online content that is unpacked in workshops and tutorials, allowing students a higher level of learning and understanding. Transforming the passive consumption of knowledge into something more meaningful and engaging is of equal, if not greater significance in an online environment.

The introduction of ILAs was a steep learning curve for early adopters and even with dedicated support there were bumps in the road. This led to the design and innovation of the *ILA Roadmap*. This graphically represents all the different steps and routes in the academic's own learning journey. At any point there are clear directions, ideas, examples and suggestions of what to do next. The roadmap itself is interactive in that every part allows the 'traveller' to click on it and view a tip sheet and embedded video on how to perform that specific step. At any point it is clear what stage in the process they are at, how they got there, and where they could go next. It is an *Interactive Roadmap*, showing how to create interactive learning activities by engaging the teacher and learner to interact with it. Hopefully the irony is not lost!

Cartoon thinking: Using pictures and words to enhance communication with students

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Recent experience in teaching design to students from Tokyo City University (TCU) has highlighted the need for alternative methods of communicating information. It has been difficult to communicate verbally due to the low English levels of some of the students (these are not ECU students, so do not need the minimum IELTS). As ECU expands its international offerings it is increasingly important to be able to communicate with intelligent and able students who have not had much exposure to learning in English. In communicating with the

TCU students I found that using diagrams and sketches worked well. For example, creating a cartoon of the process needed to carry out an assignment, such as research in books, asking questions and testing out designs on users. The students also produced visuals to describe their experiences and thinking. The approach has also been used with local students and has developed further dimensions that are proving valuable. This includes some preliminary work in using images as part of a grounded theory method. The use of illustrated lectures has been trialed with the latest batch of TCU students and feedback from students has been encouraging. This discussion looks at the visual language of the TCU and ECU enrolled students and how that has influenced the current project.

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55 minute workshop
'Constructive alignment' in assessment quality? Perspectives of multiple stakeholders

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Quality of assessment is a critical aspect of quality learning and teaching in higher education, as reflected in the *Higher Education Standards Framework* (Threshold Standards) 2015 and a vast literature. However, due to the different purposes that assessment serves for different stakeholders (e.g., students, teachers, the institution), there can be significant tensions in the quality processes considered relevant to these different purposes. Failure to achieve 'constructive alignment' of perspectives on assessment quality can threaten the validity and effectiveness of institutional assessment quality initiatives due to differences such as in understanding of terminology, attitudes, and work priorities.

This workshop will be directed at staff who are directly involved in designing, marking, and moderating assessments, as well as those who have responsibilities for overseeing and promoting quality strategies related to assessment at school, department, faculty, and/or institutional level. The objectives of this workshop are to explore the concept of assessment quality from different stakeholder perspectives and to thus bring explicit attention to the tensions that can manifest in relation to quality initiatives and the implications this can have for academic staff and others involved in monitoring and reporting on quality in learning and teaching.

Participants will collaborate in small groups and engage in large group discussions to: analyse different stakeholder perspectives on 'quality assessment' and identify indicators and measures of 'quality' that might be relevant to each stakeholder group; identify potential areas of alignment and misalignment in perspectives and the implications of these; share indicators of assessment quality used within their own institutions and analyse how these align to the various stakeholder perspectives; explore assessment quality initiatives in their institution in the context of 'constructive alignment' of perspectives on quality of assessment, and reflect on challenges and successes in implementing them. Through raised awareness of areas of alignment and possible misalignment participants will be able to reflect on how these issues relate to assessment quality initiatives in their own institutions and apply this in assessment design, assessment quality processes and practices, and staff professional learning contexts.

Creating a generic language shell to enable use of *Prudentia* curriculum mapping software across disciplines

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Within the current regulatory environment where it is crucial to account for curriculum design quality to third parties, and in the best-practice context of providing transparent requirements to students, it is vital that staff have access to current and accurate course information associated with maintaining excellence in L&T processes and delivery. *Prudentia* is a dynamic curriculum mapping software space first identified and developed as a curriculum mapping solution in the Notre Dame School of Medicine. While the tool was quickly recognised as the best and most cost-effective solution available, mapping in *Prudentia* could not be offered across disciplines until a generic language shell was developed making *Prudentia* transferable beyond the language and curriculum of Medicine.

The WAND Small Grant (WSG) Scheme provided an opportunity to supplement the work on the generic shell by combining the University's Graduate Certificate in Learning and Teaching for Higher Education with the active pilot being undertaken by the Academic Enabling and Support Centre. Joining forces will ensure the early establishment of a transferable shell using generic language that will allow the tool to be applied to any discipline area, and active dissemination of the software through a broad implementation plan. This presentation will present progress to date, demonstrate features of the mapped space, and present arguments as to how *Prudentia* could revolutionise curriculum mapping.

Interrater reliability challenges when using different marking scales for assessment in higher education: Should we be concerned?

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Assessment is probably the students' major concern when entering a course of study. It has also become a major concern for higher education institutions, because results have indicated that student evaluations of teaching rate assessment and feedback lower than other areas, reflecting students' concerns about their performance. For several decades, universities have been using categorical (A to F) or numerical (e.g., 1-16, 0-100) scales to assess students, and then employing a variety of systems to calculate students' GPA. In this presentation we highlight the importance of consistency in marking and present the challenges academics face when marking assessment components with varying weight within the same unit. In particular, we identify, demonstrate, and raise awareness about the extent of the errors that instructors are prone to, and the inaccuracies that result when using a variety of marking scales. To illustrate the difficulty in converting marks from one scale to another we provide several examples. Finally, we offer recommendations on how academics and institutions can address the related challenges and maintain marking quality standards.

FRESH: Fieldwork resilience enhancement in students in health science

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Resilience is a lifelong skill that helps professionals manage work-related stress, preventing the job dissatisfaction that leads to attrition from the profession (Grant & Kinman, 2011; McAlister & McKinnon, 2009). Helping students to understand, develop and promote resilience assists them with the challenges they will face as professionals (Dyrbye, Liselotte, Shanafelt & Tait, 2012). This presentation will provide an overview of *FRESH: Fieldwork Resilience Enhancement in Students in Health Science*, a project funded by the Curtin University Teaching Development Excellence Fund. Given concerns over student resilience leading to reduced performance during fieldwork, the primary aim of this project was to explore the development of student resilience for fieldwork in the health sciences. The project builds on the work of BRiTE in student teacher education (Mansfield, Beltman, Broadley & Weatherby-Fell, 2013).

This paper will provide an overview of the scoping review conducted to investigate resilience in the context of pre-qualifying health education. The review identified a total of 36 papers, the majority of which discussed resilience in the context of university-based teaching, with only 30% of papers making reference to resilience in the fieldwork context. Focus groups were conducted with three participant groups: clinical supervisors, students and academic staff. Deductive and inductive analysis was used to analyse the qualitative data and explore the factors affecting student preparation for placement, with particular emphasis on resilience related skills and strategies. This presentation will provide an overview of project outcomes and detail early recommendations for enhancing resilience, a key aspect of success in fieldwork and students' professional careers.

Adaptive learning in accounting: An interactive resource for building student competence in applying financial accounting threshold concepts

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Understanding threshold concepts underpinning the accounting cycle is critical to a student's successful progression from a first course in accounting to higher level courses in the accounting discipline. Our project developed an online adaptive learning resource that can potentially strengthen student understanding and application of the threshold financial accounting concepts. The resource required students to process journal entries for a fictitious business addressing various core accounting concepts. Adaptive learning technology allowed each student to track, in real-time, the development of their knowledge of each threshold concept through personalised feedback. Results from the surveys and focused groups confirmed that the students reported the resource enabled them to master some basic threshold financial accounting concepts.

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55 minute workshop
Gamifying the learning cloud: Increasing online learner engagement through gamification strategies and techniques

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Web technologies have enabled learning institutions to break free of the restrictions of the face to face classroom model and reach learners across the globe through online university courses, MOOCs and other online learning initiatives. However, this has presented challenges in retaining the attention of students who may find that their concentration and motivation is decreased when learning online as opposed to face to face (Slagter van Tryon & Bishop, 2009). This has encouraged the adoption of methods such as gamification to increase online engagement (McDaniel & Telep, 2009). In a learning context, gamification involves adding game design elements such as rules, points systems, storytelling and incentives to the learning process.

This workshop will focus on equipping participants with knowledge of what gamification is, the benefits and drawbacks of gamification, and how it can increase learner engagement by adding fun and interactive mechanics to online curriculum and learning methods. We will cover some of the common online tools, platforms and techniques for gamification, then facilitate a discussion about opportunities and challenges of using gamification to help bridge physical distance in teaching and learning.

This will be followed by an interactive activity where participants form groups and each group is assigned a basic everyday task. The group will brainstorm a proposal of how they would teach that task in an online learning environment, and how they would effectively gamify elements of it to increase learner engagement when face to face communication is not possible. They will present their proposal to the whole group, and other participants will have an opportunity to provide feedback and suggestions. Participants will leave with practical ideas on how to effectively use gamification to increase learner engagement online. They will also be provided with a resource sheet with further information, tools and strategies.

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Poster
Digital games in the outreach space: Curtin AHEAD's Quest Games

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Curtin AHEAD is an Australian Government-funded initiative which carries out a range of activities designed to inspire people to consider higher education, especially those who are under-represented at university, such as low socioeconomic, regional, remote, and Aboriginal and Torres Strait Islander people. To reach people who may be unfamiliar with university life and expectations, Curtin AHEAD designed a suite of digital games that use engaging scripts, artwork and game mechanics to provide an interactive virtual university experience and career discovery journey to the target audiences. By using digital game-based delivery methods, Curtin AHEAD has capitalised on a global shift towards gamification strategies that enable users to have fun while absorbing educational information. The games are free to play and can be accessed at any time from almost any modern, Internet-connected device, including desktop computers, tablets and smartphones. The games are promoted throughout Western Australia, and are a cost-effective way for Curtin AHEAD to reach large numbers of people as well as provide free and effective learning tools to high school teachers and community leaders.

Several thousand participants have signed up and played the games, and analytics have been collected to determine the demographic makeup of participants and the effectiveness of the content and mechanics. Further development is planned in 2017 to enhance the games in order to reach even more people and encourage them to consider higher education.

Evaluating the impact of changed delivery mode on the student experience

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Do students want flexible delivery of their learning materials? Do they know and understand the benefits of a blended learning (flipped classroom) model of curriculum delivery? In 2016, the School of Nursing and Midwifery introduced a new blended learning model, in part to increase student engagement, address low student attendance at lectures, and to allow flexibility for their busy student cohort. Studies suggest flipped/ blended learning in nurse education can promote higher order critical thinking skills, problem solving abilities, and the enhancement of communications and team working skills, all important capabilities for successful transition to the complex and dynamic healthcare environment (Betiavas et al. 2016).

This presentation reports on the early stage of an ongoing project, evaluating students' experiences of the change in delivery mode. Feedback from an online survey of the students allowed identification of issues and interestingly showed students were appreciative of the flexibility the blended model allowed in their learning.

Ctrl-Alt-Delete: Rebooting 'critical thinking' for the curriculum of the future

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The graduate attributes lists of most Australian universities identify 'critical thinking' (CT) as a key course outcome. CT is often linked with terms such as 'creativity', 'communication' - and increasingly, 'innovation'. Although copious amounts have been written on the topic, the definitions, scope and purpose of CT in higher education remain quite nebulous. Furthermore, despite the ubiquity of CT as a desirable graduate attribute, one major US study has shown that a large percentage of undergraduate students demonstrated no significant development of CT skills over the course of their degree. This suggests, perhaps, that the conceptualisations of CT are misguided, and/or that the pedagogy is inappropriate, and/or that the tools for measuring progress in CT capabilities are flawed. This paper addresses the CT conundrum in higher education by posing and responding to five broad questions:

i. What are the approaches and topics of typical CT programs?
ii. How can CT be re-envisioned for the curriculum of the future?
iii. To what extent can the methods and practices of philosophy assist in this?
iv. What would this look like in terms of curriculum structure and content?
v. How would a re-envisioned CT interact with the graduate capabilities matrix?

Overall, the responses to these questions lead to the provisional conclusion that CT should be re-imagined in line with Barnett's notion of a multi-dimensional 'criticality', evidenced by the ability to analyse, formulate and express critique, in the Kantian sense. This suggests a more integrated capabilities model in place of the current 'checklist' approach.

Global learning environments in higher education

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The evolution of learning spaces increasingly includes collaborative and distributive affordances. At Curtin University, the vision of global higher education has meant the inclusion of a variety of learners beyond the physical space all learning collaboratively in a synchronous manner. Connected learning of this nature is an imperative as the university increases its presence in more countries through international partnerships, branch campuses and research collaborations. To achieve this, the considerations of space, technology and pedagogy have been utilised to create spaces that will allow a seamless learning experience. In consultation with a variety of stakeholders, key models have been developed to best plan for, and utilise, the spaces and the global learning experience at the university. There is also a significant opportunity for redesigning learning activities to support academics adapting to this approach to teaching. To this end, the models, pedagogy and design to ensure effective creation and use of learning spaces at the university will be presented. This will be a framework for future development both within the university and to inform industry standards.

Using an online, multi-student social game to improve engagement and learning outcomes

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Gamification is the use of game design elements in a non-game context such as teaching and learning in a university.The introduction of gamification in *Fundamentals of Management* in 2015 was a first for Curtin Business School. *Fundamentals of Management* is offered across different delivery modes and semesters: online and face to face at Bentley, Sydney, Miri, Singapore and Mauritius. The aim of the *Fundamentals of Management* 'Man-Age of Empires' game is to expand your territory by answering quiz questions. Students will find the answers to the quiz questions in their interactive *YouTube* podcasts and non-interactive ilectures and text book. This online gaming software is a multi-student social gaming platform. This means students from Bentley, Sydney, Miri, Singapore and Mauritius can together play the game and compete with each other. The game can be played on a variety of devices and platforms. The idea is that players can occupy and expand territory by answering questions. Correctly answered questions are awarded with points and also determine the rank in the scoreboard. By means of a management tool, teachers can easily create questions, monitor progress and even grade students. We are currently undertaking a study to provide an insight into the relationship between pedagogy, student engagement and academic achievement in online learning at the university level.

A little help from my friends: Peer learning on *Facebook*

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The Curtin University UniPASS team utilises peer-mediated *Facebook* groups as a supportive and engaging tool for peer learning. These groups are part of the larger classroom-based UniPASS program which is nationally accredited through the Australasian PASS Centre, University of Wollongong. The *Facebook* platform has allowed for a vibrant learning experience where students can connect with peers academically outside the classroom, creating a safe, student-centred space to seek support and share content specific learning resources and interests. We have been having success in replicating classroom-based peer learning techniques on *Facebook*, including recent use of *Facebook Live* for a fully online

revision session. We will share our examples of online peer learning and step through our *Facebook Live* experience, discussing student engagement and feedback, and other potential uses. This presentation will be of interest to those involved in peer learning, and to staff wishing to engage students in the online space.

Blended learning in Australia: State of the nation 2016

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Universities worldwide are employing blended learning, however, there is no globally accepted definition of the term, and even less clarity about what constitutes 'good' blended learning. This research explores how Australian universities describe and approach blended learning. A qualitative methodology that used publically available information was gathered from websites of 43 Australian universities in 2016. Findings highlight that 67 per cent of Australian university websites include blended learning as part of their teaching and learning approach. Content analysis of the blended learning descriptions revealed three themes: one, blended learning is viewed as combination of face to face and online environments; two, blended learning optimises the features of both learning environments; and three, the strategic and purposeful nature of implementing blended learning is to enhance learning. While this reflects the most commonly accepted elements of blended learning pronounced in academic journals, the absence of information which is shared about what constitutes 'good' blended learning does little to reinforce academic institutions as communities of practice when it comes to sharing knowledge and learnings about good practice. Implications for redressing this absence are discussed.

Interactive online pre-laboratory exercises to improve preparation for first year chemistry laboratories

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The laboratory has the potential to be a rich learning environment for students in any science discipline. However, preparation for the laboratory can help student learning. The aim of any pre-laboratory exercise is to prepare the mind for learning in the laboratory (Chittleborough, Mocerino & Treagust, 2007). The traditional approach to pre-laboratory exercises usually involves reading the laboratory manual and answering questions. In recent times there has been increased activity to present the material from the laboratory manual as an online video and/or online quiz (Teo, Tan, Yan, Teo & Yeo, 2014). In this talk we present the development and evaluation of an interactive online video, which acts as the pre-laboratory activity for a first year undergraduate chemistry laboratory. The video details the experimental procedure but at two points in the video students are presented with a choice. Students can pick any of the choices presented to them in order to continue with the video. Students are given feedback on whether their choice had the desired outcome or not. We evaluate the impact of the interactive pre-laboratory video through the use of online surveys and focus group interviews with students and demonstrators. We also compare the effect on student preparation of interactive online video with non-interactive online videos.

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Learning through teaching: Reflecting on one month in a Chinese university

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This presentation recounts the facilitator's experience teaching a one-month study skills unit at a regional Chinese university in April 2016. It details how the experience has informed and

extended the facilitator's teaching and learning journey. The study skills unit was taught to students participating in a combined Chinese-Australian academic program, and was specifically designed to bolster student academic literacy and prepare these students for their transition to Edith Cowan University in their third year of study. As the facilitator describes in this abstract, the learning experience was not just for the students but also for the teacher who developed a deeper and more attenuated understanding of the issues Chinese students face when transitioning to Australian university life. In this abstract the facilitator seeks to relay some of the challenges faced and opportunities gained from his time in China. This culminates in a series of tips and suggestions within this presentation, aimed at those that may be planning to teach in China in future or those looking to better cater to international Chinese students studying here in Australia.

The Influence of basic Latin and Greek etymology knowledge on anatomy learning, understanding and outcomes in first year Biomedical Sciences students

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Over 90% of biomedical terminology is derived from the Latin and Greek (L&G) languages. Evidence suggests knowledge of these languages significantly influences anatomical learning; nevertheless L&G are decreasingly studied within educational systems worldwide. L&G etymologies are used to describe the location (preoptic), function (levator labii superioris), direction (ante, post), shape (bicep), object (calyx), similarity (vermis), language (sigmoid), or mythology (atlas) of anatomical structures. Therefore, knowledge of L&G etymologies can be advantageous when mastering the language of modern anatomy. This study (approved by Curtin Human Research Ethics Committee HREC number RDHS-57-16) investigates the impact of an online *Anatomical Etymology Training Tool* (AETT) on first year student test performance. All participants (N=46) completed the same test at the beginning and conclusion of an eight week study period and 23 students were given access to the AETT between each test. Participants' final exam scores for their university unit were also collected. Those who participated in the AETT scored higher in the Post-Test and Etymology Test despite no overall improvement in final university examination score. This study suggests that L&G etymology knowledge may enhance anatomical learning and understanding, but not unit performance. These results provide preliminary insights between L&G knowledge and anatomy learning with the potential for stronger associations in larger cohorts.

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55 minute workshop
Should you be using virtual reality in your class?

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This workshop will introduce and provide hands-on experience with virtual reality (VR) technology and collaboratively explore options for implementing VR in classroom settings. VR is frequently proposed as an avenue to make higher education more engaging, motivating and immersive for students (Psotka, 1995; Hoffman & Dzung Vu, 1997; Freina & Ott, 2015). Motivation is a significant factor related to positive learning outcomes (Lee, et. al., 2010). Virvou et. al. (2005) found that educational VR games can motivate students while improving learning. In addition, recent advances in the technology have made VR more practical for classrooms - *Google Cardboard*, in particular, uses standard smartphone devices and apps to provide a very cost-effective option for exploring this new technology.

This workshop builds on our recent research using VR to teach teamwork. Teamwork is widely disliked by students, but we hypothesised that the engaging nature of VR could improve attitudes towards teamwork for first year science students. Students completed either an activity involving *Google Cardboard* VR headsets or an equivalent paper-based activity. Both activities required students to work in small groups where they had to assign and perform certain team roles to solve a puzzle. Our results showed that both activities led to students developing slightly worse attitudes toward teamwork. This confirms existing research that demonstrates students maintain negative attitudes toward teamwork even when they have positive experiences in class, and demonstrates that simply adding VR to classes is not a panacea for problems with student engagement.

In this workshop, we will discuss the drawbacks of VR, including nausea, cost, and time. We will also discuss situations in which VR may be beneficial for student engagement, such as for understanding spatial relationships. All participants will have a chance to try *Google Cardboard* VR headsets and discuss potential applications in their own teaching. This workshop is designed for university lecturers who are curious about whether VR would be a good fit for their class. No prior experience with VR is necessary and participants are not expected to be tech-savvy; we offer a fully guided experience! Participants are encouraged to bring their own smartphone to the workshop if they own one and are willing to down load a VR app (with assistance from the facilitators).

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Physics in a week *

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There has been a shortage of suitably qualified teachers of physics in Australian secondary schools for many years, and there are indications that this shortage could increase in the near future. In response, the Western Australian Department of Education funded an intensive one week WACE Year 11 physics course as a physics refresher for teachers. The course was run in November 2015 at Edith Cowan University for 23 Department of Education teachers. It followed a highly interactive format and included lecture, tutorial and laboratory type activities. Teachers were observed to be highly engaged with the content and supportive of the intensive format. In a written survey teachers reported that they were very satisfied with the course and their learning outcomes. The Department of Education provided funding to repeat this course twice in 2016.
* *Full paper on website*

Making curriculum visible: Engaging students in learning outcomes and career relevance through a multi-dimensional, interactive map

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Imbued with academic culture and language, programs of study – including details on individual subjects – are often unfamiliar to the majority of first year students and those considering tertiary education. Current students are able to access this information online, but the information frequently lacks detail and is presented such that there is minimal student perception of relevance. Students rarely see a program-wide view of their studies, and yet their programs are developed with just such a holistic view. Degree structures are often difficult to comprehend and opaque to commencing students due to the complexity of the course information, the unfamiliar discourse, the abundance of information and the non-interactive nature in which subject matter is presented. Clearly defined graduate attributes are essential for producing graduates with the skills necessary to be proficient employees and contributors to society.

The Curtin Fellowship identifies the need to communicate transparent and 'visible' curricula to students to enhance first year transition, retention and successful course completion. The Fellowship will generate a national conversation around how to better communicate and engage students in their program of study through the implementation and support of *MyCourseMap*, a multi-dimensional, interactive curriculum map using digital and touch

technology that increases transparency and relevance of curricula for students. The Fellowship also aims to increase awareness of the value and importance of graduate attributes for graduate success.

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Student-generated video library content for learning and teaching intercultural competencies

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In this presentation, we share with you our experiences of using student-generated video content for learning intercultural competencies in a unit of study called *Culture and Ethics in Business*. Video has been employed in education in various forms for nearly three decades (Stempleski & Arcario, 1992) with particular pedagogical benefits assigned to student-generated videos (Kearney & Schuck, 2005). Guo, Kim and Rubin (2014) showed that short and spontaneous videos have the greatest engaging potential for students. We will outline the initial development of a library of video content generated by students for the purpose of enhancing their learning and engagement. In doing so, we describe a process where students become active participants in the generation of knowledge that is used for critical discussion and personal reflection. Topics and issues captured in the video library are emergent (rather than pre-determined) in that weekly topics for video-recording (either in class or immediately after class) are based on issues raised in class which have generated the most interest and discussion. These topics are spontaneous, serendipitous and grounded in the in-class experience – and include cultural practices, traditions and norms and biases on a range of topic including food, family, social hierarchy, education, fashion, culture shock and cultural identity.

As part of this journey we have captured students (on camera) telling stories and sharing authentic experiences. Our ultimate aim is to create a digital library of these student-generated videos to use as an ongoing resource for current and future students. This presentation outlines our journey to date.

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Assessing intended and perceived learning objectives in science laboratory classes: How well do they align?

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Laboratory classes are widely considered a critical part of any science or engineering degree program (Feisel & Rosa, 2005; Hofstein & Mamlok-Naaman, 2007). This project aims to assess the correlation between what students perceive are learning outcomes of their undergraduate science or engineering laboratory class, and the learning outcomes intended by the staff who designed the class. To assess the learning objectives from a laboratory context, we use a well-known curriculum evaluation framework developed by Treagust (1987), where we assess the learning objectives of laboratory classes from the intended objectives (as

designed by the unit coordinator) and the perceived objectives (by the students). The perceived outcomes were obtained through a survey administered to the students performing the experiment. A similar survey was given to the unit coordinators to obtain the intended outcomes. The survey was separated into scientific and practical skills, theoretical and conceptual knowledge, and generic skills. The survey results were compiled and a summary was given to the unit coordinators to comment on. This paper focuses on two laboratories. Both laboratories show good alignment between the intended outcomes and the perceived outcomes for all three sections of the survey with slight variations within generic skills. Both unit coordinators found the themes identified by the students to satisfactorily align with the intended learning outcomes.

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A new professional learning framework for staff at Curtin

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Previously, Curtin Learning Institute (CLI) has coordinated and delivered programs such as the University Foundations program, in both a face to face mode and online at set times during the year. However, across the University, faculties are requesting more flexible, personalised professional learning opportunities for their staff who often arrive at the university with a variety of academic and work experiences as well as levels of tertiary teaching experience. The aim is to offer something that will assist staff to hone their skills and be enculturated into the values and vision of the University within the learning and teaching environment. To address this need, the CLI team in collaboration with others across the university has developed a new adaptive *Professional Learning Framework* available for staff to do just-in-time and shaped to suit their needs. The program will be integral to the Peer Review of Teaching process and aligned with career progression – as per the *Teaching Excellence at Curtin Framework*, the *Curtin Leadership Framework* and the revised version of *Curtin Expectations for Academic Performance* (imminent). The Framework aims to support staff to teach in both global and local contexts (including understanding digital learning, working in distributed learning spaces, and using collaborative learning techniques). The team has chosen software that allows elements to be game-based, with the overall aim to motivate learners to learn at their own pace and engage with the material that is most useful to them in their role. The Framework and some of the module sections will be showcased at this presentation.

Developing a shared vision of the future academic library to support our future learners

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In response to a transformed learning environment, the Library is re-imagining our approach to all aspects of the Curtin students' Library experience. This presentation will share what the academic library of the future could be and needs to be to support our students of the future. With the proliferation of online resources, the Library building is no longer considered a storehouse of physical collections. This, plus the fact that many of our students do not physically visit the Library in person (or cannot as they are scattered around the world), is challenging notions of how academic libraries will support students on their future learning journeys. The number of students actually coming into the Library is rising and this makes it vital that the Library not only responds to what the students need to succeed now but anticipates what they will need in the future.

The Library is already planning to:

- Make extensive use of technologies such as augmented reality and mobile apps coupled with the development of a maker community and enhanced maker space.
- Provide customised digital fluency (including information literacy) support at point of need.
- Develop innovative hands-on learning activities, and
- Increase our focus on expanding support and increasing access for the very diverse student groups.

But what else should we be planning? Curtin University Library has a significant opportunity over the next few years to change the physical Library as part of a major refurbishment and this will be coupled with an enhanced virtual presence for students.

Using video essays for assignment purposes

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Film and video lecturers are qualified subject matter experts, however many still use traditional teaching methods. To be relevant and engaging, contemporary student teaching and learning will need to be delivered using e-learning methods, supported by online and social media platforms. An example of this is the emergence of the video essay as a teaching and learning format. This paper educates film lecturers about harnessing the video essay as a pedagogical tool. It will argue that the video essay takes advantage of the existing production skills of students and combines it with critical enquiry. Furthermore, the paper will explore the video essay as a multimodal form of communication that works in conjunction with media literacy undertakings.

Activating an appreciative inquiry approach to develop academics' teaching potential

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Appreciative inquiry (AI) is a well-researched and utilised positive change process that seeks to engage the 'best' of people and the organisations in which they work. AI has and can be used extensively in any area of education (e.g. develop a school vision, create effective networks and develop effective teams). The AI process is inclusive as it encourages participation from all members to participate through its *4/5-D model* (define, discover, dream, design and destiny). The presenter is an accredited AI facilitator who has led many educators through the process with positive outcomes and feedback due to its high-level of inclusivity. The strengths-based model has participants actively participating in the change process from start to end with the focus on a common goal.

Participants in this presentation will develop:

- an understanding of what an 'appreciative inquiry' model is;
- an insight into how the strengths-based model assists in achieving organisational change and growth; and
- a consideration of how appreciative inquiry may be applied into their own practice to achieve positive growth in teaching.

Collaborative intercultural teaching partnerships as a strategy to build Indigenous cultural capability in health professional education

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A new unit on *Indigenous Cultures and Health Behaviours* (ICHB) was delivered to approximately 2,500 first year students from 26 health disciplines in Semester 2, 2016. An intercultural partnership approach was used with staff from the Centre for Aboriginal Studies (CAS), Faculty of Health Sciences (FHS) and Curtin Learning and Teaching designing, developing and delivering the new unit.

Staff from CAS and FHS participated in a 2 day PD program which incorporated the *Working Together* (Scott et al., 2014) intercultural leadership program and modelled intercultural teaching leadership through facilitation by both Aboriginal and non-Indigenous staff. The aim of the program was to assist ICHB teaching staff to develop robust skills in working collaboratively and in intercultural facilitation with the capacity to develop culturally safe learning spaces for students to explore intercultural perspectives in an open, transparent and supportive way (Scott et al., 2014). Failure to adequately prepare staff risked both staff and students being exposed to culturally unsafe practice. The *SHARE* tool and *Confidence to Teach Indigenous Content in an Intercultural Space Questionnaire* (Durey et al 2016) were used as prompts for discussion. Ongoing support was provided through detailed tutor guides, tutor meetings, and available informal peer support. Evaluation results from staff focus groups indicated that the PD program, guides and meetings were important in preparing and supporting staff to work in intercultural teaching. Despite all FHS staff not being selected for their intercultural capability, teaching partnerships are proving successful. Challenges and successes (both anticipated and unexpected) will be discussed.

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Analysis and characterisation of various interactions in face to face and remote access chemistry laboratories

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A detailed understanding about the learning process in the science laboratories can be helpful in designing both physical and remote laboratories and in improving learning. However, studies of face to face and remote laboratories have focused more on learning outcomes, and less upon the learning process. This research aims to study how interactions happen in learning, and how they affect the students' learning outcomes, by answering these questions:

- What type and range of interactions do students engage in during face to face laboratory work?
- What type and range of interactions do students engage in during remote laboratory work?
- What level of interaction is essential for cognitive learning outcomes of students in face to face and remote laboratories?
- How do students' perceptions of their understanding of science concepts compare between face to face and remote labs?

Consequently, this research is designed to address this problem by focusing on coding and analysing student and instructor behaviours in both face to face and remote chemistry laboratory classes in two Australian universities. Direct observation and video/audio analysis based on one model which comprises a comprehensive list of interactions that happened in the laboratory classroom; as well as pre-laboratory and post-laboratory surveys have or will be used in the whole process. Results based on preliminary observations will be presented, which

indicate that the frequency of various kinds of interactions in different laboratories have some common features.

'From bean counter to business advisor': Innovation in accounting course student outreach using active learning approaches

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This presentation reports the pilot of an innovation using active learning approaches to create an engaging activity for high school students as part of the School of Accounting outreach project. Designed to dispel the 'bean-counter' perception about the accounting profession, the activity aimed to create a fun activity which informed students about the extensive role of analysis and decision making in contemporary accounting. A chocolate chip cookie mining activity from another discipline (Earth Sciences) was adapted by the School of Accounting and Curtin Future Students for use in a 30 minute session. It provided a springboard for discussions about decision-making; traditional accounting ideas such as the matching concept were compared with newer accounting policies like corporate social responsibility. Feedback from thirty Western Australian high school students indicated that the activity was fun and quite different from the students' experience of learning high school curriculum accounting. The Future Students area appreciated the discipline expert input into developing the session, noting that it took the students to a level beyond generic business course information. Participants in this session will have the opportunity to experience the activity and engage in discussion about innovative and engaging ways to attract students using an active learning model. Lessons learned and future directions will be discussed.

Achieving successful online delivery of musicians' performance health education

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Research into the occupational health of music students has shown that up to 25% of music students who enter tertiary music schools already have some kind of playing-related musculoskeletal injury, and 70% of these face the likelihood of sustaining an injury so severe that it will impede their ability to perform. Implementing health education is challenging in an industry where it is not seen as a priority, despite the well-established effects of ill health throughout the careers of musicians. Music teachers, educational institutions and healthcare professionals all play a crucial intermediary role in changing attitudes towards prioritising performance health for student musicians, yet they often do not have access to the information or tools required. *Sound Performers*, an online course focused on healthy music performance and practice has been developed with the support of an OLT large grant to meet the need for a widely accessible educational resource. The Internet platform of this expert-designed resource has the power to promote awareness of healthy performance among music students, educators and healthcare professionals inexpensively and on a wide scale. This presentation will discuss the development process, outcomes, challenges and opportunities in creating a sustainable online course for the effective online provision of educational information on healthy music performance and practice. It will present results of research conducted with Australian university-aged music students doing a pilot version of the course to assess levels of self-responsibility and self-efficacy in student learning in relation to the acquisition of performance-health information.

Big data and best retention: Longitudinal and nation-wide analyses of student-departure predictors

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Within higher education, student attrition detrimentally affects individuals, universities, and societies as a whole. As a result, it is essential to develop a clear understanding of the variables that increase a student's risk of departure. However, despite this need, much of the existing research in this field is out-dated (tracing back to the 1970/1980s), and has been largely based on relatively small samples representing a narrow range of disciplines. Furthermore, whilst some investigations have identified causes of student-departure (e.g., burnout), very few studies have considered which individual differences place students at risk of these underlying contributors/causes. Without looking beyond the first-tier of attrition, university management may not fully understand the 'root-level' predictors, and best-practice policies/interventions might not be implemented. Therefore, to address these gaps within the literature, the first study-phase adopted an innovative 'learning analytics' approach, employing completion/non-completion data from a longitudinal (10-year) project involving 24,635 students. Ultimately, through this investigation, various patterns of demographic and study-based variables that substantially increase the risk of attrition have been identified (with a model offering ~80% predictive accuracy). Following this investigation, a recent nation-wide dataset of 2,451 students from all Australian universities was analysed, to provide a novel understanding of the factors that predict student burnout. To enhance the uniqueness of this second-phase, a host of personality/psychosocial factors were considered - rather than solely demographic and study-based variables as per typical attrition research. Ultimately, to benefit both students and institutions alike, this presentation will also offer innovative suggestions for future research, retention interventions, and university data collection.

Poster
Is it really worth all the pain? A theoretical investigation of students' effort-reward imbalances

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Despite the pervasive rates of student distress within university contexts (estimated as high as 84%), and the effects of this distress on attrition/withdrawal prevalence, much of the existing research within this field is atheoretical in nature. Ultimately, without theoretically-based investigations, it is unlikely that optimal interventions for student stress and retention will be designed and implemented. Therefore, to provide an innovative analysis of student distress, and to highlight a novel predictor of students' withdrawal intentions, the first university-based application of Siegrist's (1996) effort-reward imbalance theory was conducted. Using a unique sampling method (via *Facebook*), data from a nation-wide sample representing 2,451 students from all Australian universities were collected through an e-survey. Results highlighted that unfavourable discrepancies between effort expenditure and the associated reward obtainment influenced 41.5% of the students, and were detrimentally associated with student-distress outcomes (burnout and withdrawal intentions). Novel individual differences were also assessed to investigate whether these factors place students at greater 'risk' of experiencing detrimental imbalances (e.g., imposterism, overcommitment), or if they moderate the effects of these imbalances (e.g., resilience, year of study). Whilst this poster focuses on the quantitative results of this research, a supplementary handout will be offered which includes an initial analysis of the 330 comments that were provided on the survey's single open-ended item. Ultimately, the results from this study offer unique theoretical and practical implications for the prevention/management of student distress and attrition (especially in relation to innovative teaching/pedagogical practices such as gamification-systems, work-integrated learning, and marking processes).

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55 minute workshop
Reimagining learning and teaching in higher education: Competency, Agency, Verified Evidence (*The Divergent Learning Approach*)

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Despite efforts to increase flexibility, traditional university teaching and learning can still be seen to be dominated by structures, scaffolds and systems that support instructivism and a command/control environment, resulting in a highly variable learner engagement and performance, a promoting of learner dependence and an inhibition of innovation. Traditional pedagogical approaches could be seen to be insufficient for preparing students pursuing

contemporary higher education, or for the development of their lifelong learning as autonomous creators of knowledge.

There have been significant advances in a range of technologies that allow the personalisation of learning in order to improve student performance and increase student agency. These advances include social learning platforms, digital learning objects and re-imagined approaches to teaching, learning and assessment. The heutagogic approach re-imagines teaching and learning in higher education in the light of these advances.

A heutagogic approach prefers contemporary competence, agency and verified evidence drivers in teaching and learning over the more traditional content, dependence, assessment and grades ('CDAG') approach. A heutagogic approach reimagines each component of the learning and teaching process at the higher education level and uses a digital reflective framework (for example the mme-moe.com software) to provide a contemporary alternative to the traditional CDAG approach, which is generally supported by content management focused learning management systems (like *Blackboard* or *Moodle* for example).

This workshop would be suitable for anyone who would like to consider an alternative method to facilitating learning. It demonstrates the use of a digital reflective framework, the mme-moe.com software, and presents the results of several initial trials in a variety of contexts. If participants bring their own device they will have an opportunity to engage with the software and examine the various aspects of the framework.

Reference

mme moe. Home page. http://www.mme-moe.com

Graduates' perspectives of research skills developed in their degree and used in their work*

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Graduates and final year students in Animal Science, Business, Electrical Engineering, Media, Medical Science and Oral Health programs were interviewed to determine their in-program and after-program experiences of the skills associated with researching, critical thinking, problem solving, evidenced-based decision making and clinical reasoning. The feature in common across these diverse undergraduate programs, and one Masters program (Business) was that the *Research Skill Development* (RSD) framework was used by educators to conceptualise learning and assessment in courses in order to make research skill development and feedback explicit. Analysis of the interview data has shown:

- Research skills are deeply adopted by employed graduates because they are directly related to their daily work practice;
- Research skills are valued late in a degree program, and the majority of students indicate that the explicit nature of the teaching and assessment of research skills early in their degree was a decisive factor in the development of those skills;
- There is variation in how explicit skills should be in the degree, with for example a majority of Oral Health graduates interviewed clearly preferring their explicit development, whereas for those graduates of Media it was split 50-50;
- Students tended to adopt terminology that was in keeping with their discipline, for example Engineering graduates discussed problem solving and critical thinking when asked about their research skills.

This qualitative data is not representative, but does demonstrate that explicit RSD and assessment can be a major contributor to student learning. In light of the need for shifting terminology, current work is focussing on how educators modify the RSD into their own *Models for Engaged Learning and Teaching* (MELT).

* See also John Willison's workshop presentation.

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55 minute workshop
Models of engaged learning and teaching: MELT for fluid thinking*

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How can you enable graduates of your programs to have developed deep understandings of subject matter *and* a research or problem solving mindset? How can students connect together the skills associated with problem solving, critical thinking, clinical reasoning and researching in ways that enable these skills to mutually reinforce across multiple semesters of a degree?

This workshop will help you address these questions by enabling you to participate in collaborative modifications of one of the *Models of Engaged Learning and Teaching* (MELT) in a way that suits your contexts. The idea of MELT comes from academics, sessional and professional staff who have collaborated and adapted the six facets of the *Research Skill Development* (RSD) framework (Willison & O'Regan, 2007) to suit a range of contexts and in unexpected ways.

Multiple uses of the MELT with context-appropriate terminology provides various opportunities for these facets to become student thinking routines (Ritchhart & Perkins, 2008) that develop researching, critical thinking and problem solving mindsets by the time of graduation (Willison & Buisman Pijlman, 2016). This workshop provides participants with time to learn about others' models and adapt these so that they may MELT and mould their own course or learning contexts, including:

- learning sessions in lecture theatres, tutorials, labs, library, field and online
- formative and summative assessment for feedback within and between subjects
- individual subjects or across degrees, face to face, fully online and blended
- undergraduate, coursework masters, research degrees and foundations.

The audience will include those teaching undergraduate, masters or PhD students, including academic, sessional and professional staff. A range of discipline representation and of expertise in T&L is expected. Participants will work in small groups to collaboratively:

- interact with the six facets of MELT. This involves participants working in teams and applying each facet to a real-life scenario.
- adapt the model for their own teaching and learning contexts. This involves participants working in pairs or threes to change the terminology in the MELT provided, yet staying within fixed parameters.
- report back to the whole group the emerging models.

We will finish with a wrap-up and where-to-from-here, including an invitation for long-term involvement in the national MELT work.

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For more information, see the RSD website: http://www.adelaide.edu.au/rsd/

* See also John Willison's parallel session presentation, "Graduates' perspectives of research skills developed in their degree and used in their work".

Volunteering and the work-integrated learning experience

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Does the opportunity to experience and 'have a go' build confidence and self-efficacy? Social learning theory suggests the opportunity to observe leads to reflective behaviour (Bandura, 1991). Kolb and Kolb (2005) also suggested that experiential activities facilitate improved development of skills. An ongoing longitudinal study is considering the role that volunteering plays in developing various aspects of leadership including planning and managing of human resources along with other skills essential to a productive workforce. Initial findings about skills transfer as a result of taking on roles in volunteer-involving organisations suggest that the opportunity to observe, be mentored and most importantly 'have a go' helps to build

confidence in the volunteer's own ability. These findings add to a growing body of knowledge about university students volunteering as part of a suite of work-integrated learning activities, suggesting that student preparedness for the workplace can be enhanced by volunteer experiences.

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Roll the dice! Enhancing student engagement and knowledge in the classroom by gaming

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This presentation describes use of a board game during a one hour tutorial to reinforce the content of an *iLecture*. Students were told to listen to a recording on the nitrogen biogeochemical cycle as part of their weekly assignments. The topic is challenging because nitrogen can acquire different phases and redox statuses during its way through the many environmental compartments. Their 'shaky' knowledge was recorded at the beginning of the tutorial asking five key content-related questions on the nitrogen cycle via *ParticiPoll* (LOT 1-2). Then, the students were asked to play a 'simple' board game where they had to imagine that they themselves were nitrogen molecules. Rolling the dice, they personalised the nitrogen atom as it moves across the different spheres and acquires different nitrogen forms and oxidation states. Using funny off-handed language that I created deliberately in the description of what they are undergoing, the students develop a more in-depth appreciation of natural processes. After 30 minutes, the gaming activity was stopped and the students were asked to answer some questions that prompted them to reflect on their activity. These questions were not related to the lecture content, but required higher thinking skills (LOT 3-5). At the end of the tutorial, their LOT 1-2 knowledge was tested with *ParticiPoll* again to see in how far the message had stuck by playing the board game. Outcomes from this gaming 'experiment' will be shared with the audience.

The utilisation and efficacy of lesson plans to the blended learning experience

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A suitable lesson plan is considered a useful instructional teaching tool and a crucial component of effective learning experiences for both the educator and student. In the higher education environment, where blended learning has been identified as imperative in meeting competing student, educator and economic demands, the utility of the lesson plan is ill-understood. This paper aims to identify the utilisation and efficacy of the lesson plan in creating engaging blended learning teaching and learning experiences. A systematic literature review revealed that over the last 10 years, 63 peer-review articles have been published which examined lesson plans across the blended learning mode. Thematic analysis of the articles revealed that lesson plans can be useful in not only refining curricula, but also in contributing toward stronger student engagement because of better alignment between online and face to face experiences, and the creation of clear student and educator expectations. The review also highlighted that significant support and training is required for discipline academics to develop adequate lesson plans. These outcomes have implications for educators adopting blended learning in their teaching portfolio.

Does a good student experience really matter?

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Comparing student feedback (experience of current undergraduate students, experience of undergraduate graduates, employment outcomes) for the five Western Australian universities on the *Quality Indicators for Learning and Teaching* website [http://www.qilt.edu.au] showed ECU rated second and UWA on fifth place overall. Literature indicates that a good student experience relates to low attrition. However, according to the same results, UWA has the lowest and ECU the highest attrition rate in Western Australia. Student interviews at ECU showed that a university's reputation seems to be an important attrition factor. Despite acknowledging their high satisfaction with ECU, some students leave ECU for a university they perceive as 'better.' Accordingly, university managers should focus on promoting ranking results and improving a university reputation to improve student acquisition and retention. Future research should investigate the importance of a university's brand for student retention.

Details for previous conferences may be obtained from the TL Forum proceedings website
http://ctl.curtin.edu.au/events/conferences/tlf/tlf-pubs.cfm