Session 1: Monday 11:00-12:40

Student Centric Lifecycle & Experience

55 - Creating a Connected Student and Staff Experience using Dell Boomi

Ms Nicole Fishers

Flinders University

Most Higher Education institutions are undertaking significant transformation of their businesses. Flinders University's technology roadmap is based on a five-year digital strategy which will help us deliver personalised and customised education experiences to around 27,000 students throughout their entire journey – from prospect to graduate; and enable staff to deliver these services in a timely, efficient and empowered way. Robust and seamless integration is key to both delivering a connected student and staff experience and keeping pace with the ever growing digital expectations of our workforce and customers.

The starting point for this initiative revolved around our cloud first strategy; with new systems utilising SaaS and where possible existing systems to be migrated to the cloud. However, we quickly realised that moving to the cloud was just the first step and we needed a means of connecting applications quickly and seamlessly with one another, both SaaS and on-premise, in order to provide a unified experience for our users. Integration in this hybrid environment meant we needed to look for simpler and faster ways to connect our systems.

The Boomi integration platform is allowing us to quickly integrate both our cloud-based applications and on-premise applications creating a modern and user centric environment through which students can learn effectively and staff are able to deliver the right services at the right time.

Boomi allows us to rapidly develop re-usable components which can be quickly deployed to connect systems along with providing tools to support API management and data management.

The ability to keep pace with changing technology's and user experience expectations rapidly and with as little user impact as possible is one of the keys to an adaptive enterprise.

This presentation will take you through how Flinders University's is utilising the agility and flexibility that Boomi brings to create a connected student and staff experience.

60 - Using Echo360 quizzing and polling to create student-centric learning experiences in Humanities lectures

Dr Joy Mcentee, Mrs Jessica Viven-Wilksch, Dr Rebecca Vivian

University of Adelaide

Background: This case study reports on using Echo360 Active Learning Platform (ALP) in the Humanities at The University of Adelaide.

Echo360 is classroom-based technology that facilitates active learning and interaction in large classes. It was evaluated in a large (1,250 students) 2016 study at Griffith University, with results showing that students were engaged by the technology and academics saw value from its use (Duffy, James, Campbell and William 2017).

In 2017, Joy McEntee introduced Echo360 activities in an undergraduate English class consisting of 130 students with positive results. In 2018, she and Jessica Viven-Wilksch are leading a study involving three academics and 570 undergraduate students.

This project investigates optimal ways of using Echo360ALP to increase student engagement and to make lectures student-centric. In fact, it is doubly student centred, as it adopts a 'Students as Partners' approach, with two student partners working with lecturers to develop and evaluate Echo360 activities. (Healey, Flint and Harrington 2014).

Methods: This study adopts a mixed-methods approach, using surveys, focus groups and student partner reflections.

Findings: In a survey of students in the 2017 pilot (n=39)

- 89% said Echo360 was useful to their learning
- 72% said Echo360 increased their engagement in class

The larger 2018 study is still in progress, but results will be available for report at the THETA conference in May 2019.

Discussion: Key activity types in Echo360 include quizzing and polling, but many in the Humanities are concerned about using such tools, feeling that they can be reductive. But, as a study in English, Film and History subjects is demonstrating, using the active learning features of Echo360 can enrich learning, and break down barriers between teachers and students.

63 - Work. Live. Play. Learn: Social media, complexity and learning – the digital stories of social science students in a post-digital world

Dr Peter Bryant

University of Sydney

Understanding how and why our students participate in learning is a key challenge for modern higher education institutions. How students experience learning is not bound by the walls of a lecture theatre or the firewalls of the Learning Management System. Learning practices intersect personal, professional and educational lives in complex, inter-connected and personally defined and managed ways. Learning inhabits conversations, reflections, casual and fleeting connections, ambitions and expectations that are not always located in the classroom or even on campus (Bryant, 2017). Social media reflects this complexity and attracts significant debate and contention within higher education. The practices of using social media are both injected into the learning environment by students or the institution or can be the space within which learning is facilitated and supported (Dabbagh & Reo, 2010; Selwyn, 2012). Drawing on the analysis of over 500 students stories collected in the United Kingdom and Australia since 2016, this presentation will explore the unique methodological approaches of digital storytelling and student-led research to understanding how technology shapes and intersects the learning experience. It will also identify how students use technology (and especially extended forms of social media) to forms connections between their work, life, play and learning. Through several cases, the presentation will address the critical questions of the digital divide between staff, students and institution, the critical importance of community in higher education and the relationship between 'our' pedagogical design and the way students engage with it.

81 - Driving student success through the deployment of a mobile engagement platform

Dr Mike Hobbs[1], Mr Dan McFadyen[2]

[1]Jefferson State Community College, [2]Edalex

Background: The JSCC team hypothesised that the days of an institution relying solely on their website, LMS and/or email communications to engage with students are in the past. As with many institutions, JSCC has encountered decreasing student engagement and retention. Many students today expect a mobile-first approach to communications. JSCC took a student-centric approach and investigated the impact of mobile communication technology as a mechanism to drive increased student engagement, achievement and retention.

Methods: JSCC selected the Full Measure Education (FME) platform to deploy a comprehensive multichannel communication plan including data-driven touch points throughout the semester. In addition, JSCC utilises FME to provide coaching for students and to provide staff member insights on communications and advising progress. JSCC sought to engage students based on their aptitudes, interests and aspirations, and pursued analytics-driven communications to deliver personalised and relevant information, and simplify interaction across the entire student lifecycle.

JSCC identified a number of touch-points throughout the semester to automate via the FME platform with the goal of increased engagement and performance. JSCC utilised new communication channels with this initiative: automated SMS, automated push notifications, student mobile form submission and bi-directional SMS messaging for students and coaches.

Findings: JSCC used the platform to contact 33,000 prospects and students across 77 campaigns. The outcome of these campaigns saw:
 - 246 students complete a late assessment
 - 40% of students who hadn't accessed the LMS, logged in within 3 days
 - 34% of students receiving financial aid communication took corrective action within 24 hours
 - A 3.35% increase in credit hours across contacted students

Discussion: Based on the findings of the initiative, JSCC believe mobile communication channels and technology are central to ensuring a seamless student experience to increase student engagement, activity and outcomes. With Australian university completion rates after 6 years at their lowest levels since 2008, we are exploring the applicability of the technology platform and programme methodology to the ANZ educational market. Factors that may impact on the translation of this solution to ANZ will also be discussed.

Experiential Learning

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39 - How do we make the development and implementation of educational technologies about learning again?

A/Prof Jason Lodge

University of Queensland

Artificial intelligence, machine learning, adaptive environments, virtual reality. The list of technologies poised to fundamentally change higher education continues to grow. The development and introduction of these technologies now far outpace the capacity of researchers to determine whether or not they are effective tools for learning (Lodge & Horvath, 2017). Given this lag in evidence, how do managers, designers, teachers and technical professionals decide which technologies to implement and how? What can be done to ensure

that these technologies maximise student learning and experience? Looking at the ways in which video is being used in higher education, for example, it appears that heuristics and crude data mining dominate the decision-making process (e.g. Guo, Kim & Rubin, 2014). In this presentation, I will outline how evidence from the learning sciences can be incorporated into these processes in a systematic way. Drawing on a framework developed in the Australian Research Council funded Science of Learning Research Centre (Carroll et al., 2018), I will provide ways of reintegrating what we are discovering about how the brain and mind learn back into the development and implementation of educational technologies. In particular, the careful translation of the learning sciences allows a more sophisticated approach to design, moving beyond overgeneralisations and decision making driven by economic or other crude indicators.

71 - Autonomous CARS: transforming a compulsory, introductory unit through adaptive learning technology and interactive case scenarios

Ms Katie Mills, **Ms Sarah Cesare**, Mr Ferg Roper, Dr Justine Maldon, Ms Stephanie Davenport, Ms Kate McVey, Ms Vanessa Varis
University of Western Australia

In 2018, the University Library, Educational Enhancement Unit and STUDYSmarter departments at the University of Western Australia undertook a collaborative project to redesign a compulsory, online unit for all undergraduate students. Communication and Research Skills (CARS) is completed by around 5,000 students annually; however, since its inception in 2010, it has been an ongoing challenge to appeal to a broad range of skill levels, prior knowledge, preferred learning styles and subject areas whilst developing skills and maintaining engagement and value. The decision to transform the unit using adaptive learning technology and interactive case scenarios was made in order to increase student engagement by personalising the instruction and customising the content displayed based on the student's decisions. This approach gives students the opportunity to apply and practise their communication and research skills in realistic scenarios they are likely to encounter at University. This new approach to the learning design and delivery of the unit was facilitated through the use of adaptive learning technology (Articulate Storyline 360 and LMS), as well as best practice learning design principles (customisable content and self-assessment pre-test tools), with the aim to significantly increase levels of engagement amongst students, in addition to deeper learning and practical skills development of the communication and research skills required for success at University. Focus group, survey and user testing feedback which was gathered from students in the early stages of the project has supported this approach as it made the content and learning experience more relatable, engaging and intuitive. This paper will describe the steps involved in redesigning the CARS unit to take an interactive, scenario-based approach, and examine the student and staff feedback received during the review, development and launch stages of the redesign project to demonstrate how this feedback influenced the use of the adaptive learning technology and the unit's design and delivery.

65 - It moves! - Developing Augmented Reality applications of the Merge Cube across Creative Industries & Health

Dr Ruari Elkington
Queensland University of Technology

Students across a broad the range of disciplines are required to engage with complex, discipline-specific pieces of equipment. Over the course of their studies students are required to build familiarity, confidence,

and ability in their operation of equipment then extend this learning to real-world, professional contexts. However, outside of initial in-class demonstration, and time-constrained group practice sessions, students often struggle to find the time and agency to return on-site to University to develop their ability to operate this equipment. They may also feel "time poor" regarding intensive equipment instruction reinforcing the need for innovations that directly support and enable their self-directed learning. Augmented Reality (AR) apps offer an engaging, integrated means by which the detail and correct use of complex technical equipment can be better integrated and understood by students.

The Merge Cube is a holographic trigger in the form of a small foam cube that allows users to physically hold and interact with 3D objects using augmented reality (AR) technology. Through the Merge cube students are able to "trigger" the hologram of the equipment in question and are then able to further familiarise themselves with both the holographic image and the specific augmented detail of the text overlay. In transdisciplinary collaboration with colleagues across the QUT Faculties of Creative Industries and Health this project selected and 3D scanned two key, high-use physical pieces of equipment used in teaching (a video camera and a birthing mannequin). These items were recreated as interactive holograms through the Merge AR development kits and deployed to students via the Merge Cube and accompanying iOS /Android Merge Viewer app. This THETA presentation details the development and deployment of utilising Augmented Reality (AR) technologies to encourage self-directed learning and develop students' familiarity, confidence, and capabilities in using and understanding the application of essential equipment in their professional pathways.

V1 - Session information pending

The Smart Campus – Digital transformation and innovation

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32 - Hey Chatbot, where can I get coffee on campus?

Mr. Michael Mcguinness

Griffith University

With so much information available on the Griffith University website, a project was created to allow students to have a faster search option. The project team had to come up with a way that could help students do this. The project team determined that the use of a chatbot would allow the students to ask simple questions using natural language and get the response they needed in a more timely manner. There were already other chatbots in other sectors (the Australian Government and many banks). By using the latest technologies to solve this problem, it also allowed the project team the opportunity to consider using Artificial Intelligence so that the chatbot could self-learn the types of search terms students use most. There was a need to allow the students to submit support tickets if the chatbot could not answer their request. This meant that the chatbot was going to be located on the MyGriffith landing page that students use on a daily basis (but need to sign in to see). This allowed all of Griffith University's students when logged in to use and interact with the bot (40,000 active users). Using our external partner (Squiz Matrix) our chatbot was designed and implemented using a bespoke process that has a fun and friendly style (with a cool name like Sam).

One of the challenges was determining what types of searches students used most. Want to find out how the proejct team did it? You will get see a showcase of how the project team reviewed the pros and cons of using Artificial Intelligence and how the chatbot is helping our students on a daily basis, the techniques used to find out what students wanted in the chatbot (students love free cupcakes) and what types of searches students use the most. There will also be some insight into the project delivery method that allowed the chatbot to delivered in 12 weeks.

7 - Interpretive case-based modelling: Getting beyond the tipping point in unravelling the complexity of innovation adoption in higher education teaching practice

Mrs Irena White, Professor Lindsey Conner

Flinders University

Getting beyond the tipping point in innovation adoption has remained an elusive challenge for educators for several decades. The quest for mainstreaming innovations with a proven capacity for transforming teaching, learning and critical inquiry, is particularly challenging when innovations originate bottom-up in higher education teaching practice. This is in contrast to management-directed top-down implementations, such as, Learning Management Systems and MOOCs which, it has been argued, are stifling the development and diffusion of bottom-up teaching innovations. Further challenges emerge from traditional relationships embedded within academic silos in increasingly complex education systems that are faced with constant financial pressures and changing student expectations. Case studies and survey methods in research studies have generated lists of critical success factors and identified institutional actors that play a key role in both development and mainstreaming of innovations in teaching practice within the context of this complex environment. Interpretive case-based modelling offers a new method that connects the factors and actors to unravel the complexity of innovation adoption in higher education teaching practice. The conceptual framework for this new method addresses a gap in conducting educational research which has a long tradition of applying qualitative and quantitative methods for investigating and analysing the implementation of new practices in education systems. While these traditional methods have led to valuable conclusions from research studies, they have not captured the dynamic, unpredictable and non-linear complexities that are characteristics of wicked problems found in educational systems and practices. In addressing this gap, interpretive case-based modelling weaves together primary and secondary case study data by utilising an agent-based modelling computer simulation within an interpretive research design to re-imagine and extend prior methods used in research. The new method is applied in-situ during interviews to populate models with real cases and explore ideal scenarios in real-time. The new method was developed and successfully applied during a PhD study of 15 case studies of e-learning innovation adoption in Australian and New Zealand universities. The findings suggest there is strong potential for applying interpretive case-based modelling across other fields of educational research and extending the interview techniques in this method to focus groups

24 - A case study of an innovative professional learning platform developed for Educators in Higher Education

A case study of an innovative professional learning platform developed for Educators in Higher Education

Mrs Simone Poulsen, Mrs Megan Duffy, Prof Heidi Blair, Mr Daniel Tedman

Griffith University

Background: Griffith University's Learning and Teaching community was looking for a searchable professional learning platform to host resources supporting development of teaching practices. Discipline-specific repositories existed but did not promote sharing lessons learned regarding practice across the University. Explore Learning and Teaching (ExLNT), a bespoke platform for sharing with colleagues, was developed to meet these needs.

Methods: The project leveraged a newly created Agile project management methodology developed by the central learning and teaching unit. This was chosen to ensure early buy in from the learning and teaching community and planned cycles of feedback and evolving requirement identification for the development of the platform.

Once the platform moved from development to implementation, a Kanban-like process (i.e., change management and service delivery with a customer focus) was adopted to facilitate continuous improvement. We maintained the practice of gathering regular user feedback to inform the new functionality that was delivered on a regular schedule, into an environment where functional components could be interacted with and further evaluated. Findings: Over 300 entries have been authored by nearly 80 academics and staff across the University. Academics have found it is easy and fast to share their initial findings regarding teaching practices through the platform. Their entries have been shared through the social media integrations and that each resource has a unique URL.

The multiple searching functionality (i.e., keywords, tags, categories, and natural language search) enables discipline experts unfamiliar with learning and teaching verbiage to find content that supported their professional learning needs.

Discussion: ExLNT has been established as the platform for sharing lessons learnt, professional learning opportunities, and innovative practice. The tipping point for adoption was when entries in the platform were created specifically to serve as evidence for performance reviews, promotion and citations. In addition, the inclusion of sharing resources in ExLNT as a required element of a funding model for TEL innovation is an endorsement of the ExLNT platform.

44 - Western One Stop (WOS): Hassle-free Pod recording for academic staff to self-produce video content.
Dr Rachel Bentley, Mr Serryn Fowler
University of Western Sydney

Background:In developing organisational capacity to deliver a flipped model we needed academics to self manage production of their own video pods. WOS has been designed to be user-intuitive and reduce the technophobia and time-consuming elements of video production.

WOS studios are identical on each Western campus enabling academic staff to produce video content consistently from any campus. The accessibility of consistent WOS studio content promotes ease of access and distribution for academic staff who move across campuses of Western Sydney.

Method: Developed in house Western One Stop (WOS) is a custom–built studio and software integration, and integrates presentation (PowerPoint) capture system with a custom ap integration into a tele prompt system. The strategy for campus adoption has been the implementation of 4 studios and plans for activation across 6 campuses by close of 2018.

Findings: Feedback and response to WOS has been overwhelmingly positive in the first six months of operation. The demystification of the traditional "tech heavy" production process, now streamlined and largely self-managed by the academic user is a cultural change with the university.

WOS software implementation is resulting in a consistent, professional and easy-to-use method to support flipped delivery and research video dissertations which are regularly requested in addition to traditional written abstracts. https://www.youtube.com/edit?video_id=uuXHyUvmKc8

Discussion: WOS introduction has been a catalyst for large scale organisational change in technology enabled pedagogical practices at Western. Underpinned by well-developed policy and practice guidelines on the use of multimedia production the custom designed, provision and support of the studio, is one of the tools to facilitate this adoption by the academic faculty.

An academic outcome of WOS use are the pedagogical benefits to teaching programs facilitated by quick production turnaround processes, timely content development, and the self-management by academics of this production process. These benefits are realised by academics through increased technological independence, highly efficient for curriculum content development. https://youtu.be/uuXHyUvmKc8

Future Ready and the New Reality

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6 - Future ready research teams: are we there yet?

Mr Malcolm Wolski, Dr Joanna Richardson, Dr. Michelle Krahe

Griffith University

In its annual scoreboard, the OECD (2017) has outlined how digital transformation is affecting science, innovation, the economy, and the way people work and live. However, in a recent survey across a wide range of industries, Fitzgerald et al. (2014) found that 63% of respondents said the pace of technology change in their organization was too slow. Concurrently, other researchers have found that the commitment to digital transformation weakens below the executive leadership level, and leaders struggle to understand and engage in the operating changes required in the fast-changing digital era. Hence the need to look further down the management layers to gauge how much progress is being made.

According to Galanek and Brooks (2018), the current focus of higher education IT in relation to faculty tends to be on its role in supporting learning, teaching, and students. As a result, "we often pay far too little attention to the role of technology in faculty research" (p. 3). As the European Commission (2012, p. 5) states: "Every researcher should become digital, know how to benefit from technologies for scientific purposes, use relevant tools for tackling grand challenges of today through computing and data-driven research approaches, and benefit from worldwide connections and collaborations."

So, within the institution, how does management measure a research team's progress along this digital transformation path to ensure they reach the point where they are future ready, with the capability to adapt to an evolving digital reality? More importantly, what role can support services play in assisting research groups to adapt?

A review of the literature has highlighted issues regarding digital capability in the research space. While there has been some attention paid to the individual researcher skills level, no conceptual framework could be found applicable at the research team level that assesses whether they are future ready.

From knowledge gained from the literature, the authors have proposed a capability assessment framework of the future-readiness of research teams, of which the domains are Governance, Information Management, Technology Adoption, Analytics and Process Agility.

The framework provides a useful tool for support services, such as eResearch Services or Faculty Librarians, to provide targeted assistance to help research groups further develop their digital capabilities.

11 - Data Storytelling- Creating and Highlighting Research Impact

Mrs Kylie Poulton[1], Miss Amanda Miotto[1,2]

[1]Griffith University, [2]QCIF

Background: The Australian Government's Engagement and Impact (EI) assessment, incentivises researchers to engage outside academia[1] and the engagement narratives required for the EI assessment need to be written for panel members that might be unfamiliar with a researchers field of work[2] Researchers are also communicating their research impact to wider audiences through channels such as The Conversation, blogs and podcasts.

At the same time, the ever increasing number of visualisation tools has created opportunities for researchers to explore methods of transforming their research data into compelling and impactful visuals[3].

Discussion: But how do researchers turn complex ideas, research findings and visuals into a message that non-experts can understand? And how can researchers add meaning and context to their data and visualisations?

A study by Stanford professor Chip Heath found that during the recall of speeches, 63% of people remember stories and how they made them feel, however only 5% remember a single statistic[4].

Data storytelling training can help researchers construct stories that incite an emotional response and create meaning and understanding for the audience.

This presentation will explore how at Griffith University, eResearch specialists and librarians have collaborated to create data storytelling workshops - practical hands-on sessions that combine the three elements of data, visuals and narrative to construct a meaningful and memorable story about their research. Participants are also introduced to a range of visualisation tools and have the opportunity to get "hands-on" with map overlays or text analysis. It will be of interest to librarians, eResearch specialists, researchers, and anyone interested in data storytelling, researcher training and visualisation tools as well as IT and library staff who report to various "non-expert" service stakeholders.

14 - Twinsets and toolbelts – Developing Library Data Skills AKA Library Carpentry at Macquarie University Library

Ms Grai Calvey, Ms Fiona Jones, Ms Heather Cooper

Macquarie University

BACKGROUND: In 2016 Macquarie University delivered a Data Science and eResearch Platform Strategy to "provide ...a foundation of enabling data science and eResearch expertise, systems, policies, technologies and support".   In response to this development, in 2017, the Library embarked on a series of initiatives,

including developing workshops, to improve the data skills of all our library staff; to grow confidence when engaging in data science practice, eResearch conversations and the support of researchers in the new paradigm.

METHODS: In 2016 a small group of staff began a community of practice approach to the development of data skills. These early adopters were introduced to Library Carpentry lessons: Introduction to Data, OpenRefine, Unix Shell, and GitHub. These lessons were used as the basis for our 2017/2018 workshops. Learning outcomes included the development of a set of core competencies in engaging with, manipulating, analysing and managing data. The Data Skills workshops, along with an online community of practice hub and regular hacky hours, form the foundation for a strategic approach to managing both the support the Library offers researchers, and improving internal data processes and work analysis.

FINDINGS: Workshop attendees from across the Library demonstrated competence with the essential elements of data management including data description, file organisation and inputting and extracting information from systems. One benefit of the workshops was the repositioning of known processes as data skills, and the encouragement of staff to build on these skills and understanding. Issues remain in ensuring the further development and maintenance of data skills through practical application.

DISCUSSION: Future readiness in this new reality of data science requires agility and a willingness to build an understanding and momentum simultaneously, in a field that is rapidly evolving. Strategically, this requires managers to "envision the diverse contexts, opportunities, and benefits in applying data science methods" Burton et al (2018). This includes encouraging library staff to 'be in the space', championing those who are, and supporting exploration of data skills and tools.

70 - Build and train for a data-intensive future

Ms Natasha Simons, **Mr Keith Russell**

Australian Research Data Commons

Data-intensive research is rapidly growing as a methodology in academic research, business and informing policy decisions. Yet we urgently need to improve the technical infrastructure supporting the discovery and reuse of research data. Often weeks or months of specialist technical effort is needed to gather the data necessary to answer research questions. This is not because we lack appropriate technology, it is because we do not pay our valuable digital objects the careful attention they deserve. To help address this problem, in 2016 the FAIR Guiding Principles for scientific data management and stewardship were published in Nature's Scientific Data as guidelines to improve the findability, accessibility, interoperability, and reuse of digital assets. Distinct from peer initiatives that focus on the human scholar, the FAIR Principles also address the ability of machines to automatically find and use data.

 The Principles have received worldwide recognition as a framework for providing a range of benefits to researchers, research communities, research infrastructure facilities and research organisations. While they are easy to agree with, in practice they are not easy for a researcher on their own to implement. Researchers need technical infrastructure to support them in preparing their data along with skills that will enable them to maximise the value of the FAIR infrastructure investment.

 The Australian Research Data Commons (ARDC) has been leading and supporting the Australian research sector to implement changes that support FAIR. In this talk, we will discuss how we have developed and supported infrastructure that enables FAIR data across the research sector. This includes building the skills required amongst software engineers, infrastructure development project teams and librarians. We have for

example worked on a Biosciences platform to assess their infrastructure and make changes to enable FAIR data; we have developed and delivered FAIR data and software skills workshops, webinars, resources and we have partnered with global organisations in a global sprint to develop discipline specific FAIR resources.

In Unity is Strength

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61 - <u>Working together to strengthen cybersecurity in university libraries</u>

Sam Searle

Griffith University

Background: Cybersecurity is a hot topic, climbing in 2018 to #2 in CAUDIT's Top 10 Issues. Libraries are increasingly exposed to threats, with prominent recent examples including:

- a 3-day distributed denial of service (DDoS) attack on the Library of Congress

- ransomware attacks on PCs in US public libraries, and

- the Silent Librarian phishing campaign, which affected 26 Australian universities. Researchers mistakenly believed their library accounts would be closed and provided log-in credentials enabling the theft of research.

As few librarians are trained in key aspects of cybersecurity there is an urgent need for greater collaboration with cybersecurity professionals to accurately identify and effectively mitigate risks.

Methods: The presentation is a single-site case study of work across the library and cybersecurity teams in a large Australian university. Findings are relevant to other contexts, because of similarities in the way library applications are procured and managed and because of the limited number of vendors and products in the market.

Findings / Discussion: Griffith University's Library Technology Services manages a portfolio of software applications, most of which are cloud-hosted. Applications and integrations are under increased scrutiny and we now engage more with staff from Cyber Security Services in Digital Solutions, particularly when we evaluate new applications or perform major upgrades.

Cyber Security Services offers support across three main categories: process, technology, and people. This presentation will discuss both technical and non-technical actions we are taking to uplift the Library's overall cybersecurity maturity. Work to date highlights the Library's need to focus on the security architecture of software applications, to demand more mature cybersecurity approaches from our vendors and service providers, to regularly review processes for protecting log-in credentials, and to address staff information and training needs.

While this work is essential it is also challenging, in terms of project budgets and timelines, stakeholder perceptions, and the allocation of staff resources. The presentation will discuss how library and cybersecurity professionals can work together to build capability, both at the level of individual institutions and across the sector.

51 - <u>Everyone's Dream: A Network with Zero Vulnerabilities but with so many cybersecurity solutions available, where do you even start?</u>

Mr Matt Ashman, Mr Andrew Brimson

Khipu Networks Limited

Zero Vulnerability Infrastructure – Everyone's goal

The majority of cyber breaches that have crippled education institutions, caused financial loss and reputational damage, have been down to insufficient security controls, vulnerable systems and phishing email attacks. It's a never ending on-going challenge for everyone and every University to continually protect and prevent against the ever-changing cyber threat landscape.

With a huge range of cyber security solutions available, coupled with many of them often being developed for the private sector only, makes it a challenge for the education sector to choose the right solution that not only protects their environments but is also cost effective and doesn't affect the staff and student teaching and learning experience.

We've been providing networking and cyber security services/solutions for over 15 years into the education sector. Working in partnership with our customers understanding their requirements and challenges for cyber protection, has enabled us to create a range of cyber risk assessments that help institutions identify weaknesses in their environments making them vulnerable to a wide range of common attacks.

We target the key elements of the network, assessing the vulnerabilities and risks associated with:

USERS: Phishing and Cyber Security Awareness

ENDPOINTS: What's on your network

INFRASTRUCTURE: Internal and external vulnerabilities

PERIMETER SECURITY: Sufficient security and application visibility (on-premise, private/public cloud)

These assessments provide the information needed to justify investment in the 'right' cyber security solutions to maximise protection and prevention.

In our presentation, we will share real-life findings from University projects detailing their problems and challenges associated with cyber-attacks, the implications, how they were addressed and outcomes from solutions implemented. Our approach is to help simplify cyber security strategies by identifying what is at risk, its priority, how to remediate and provide on-going protection. Example customers projects include:

Visibility and control of applications and threats – a video case study at the University of Manchester: https://goo.gl/pvEjer

Minimise your attack exposure – a case study at Coleg Cambria: https://goo.gl/udbkzT

Proactive and prevention against cyber attacks – a case study at University of Winchester: https://goo.gl/GjvA9r

Effective protection against phishing attacks – a case study at Guildford College: https://goo.gl/Yj2F29

KHIPU Zero Vulnerability Infrastructure.pdf (could not be inserted)

V2 - Session information pending

95 - Connecting, collaborating, reviewing and transforming: designing curriculum into the future

Dr Denise Wood, **Mr Greg Auhl**, **Ms Sally McCarthy**

Charles Sturt University

Cohesive, transparent curriculum supports the provision of quality learning experiences for students in higher education in Australia, and meet the requirements of accreditation as described in the Higher Education Standards Framework. At Charles Sturt University, course design is driven through the Course

Review, Design and Development policy, which has four key principles: collaboration, feedback, constructive alignment and criterion references standards based assessment.

The future for higher education institutions lies in courses that are intentionally designed to meet multiple expectations from industry and government regulators as well as provide learning opportunities that are responsive to student need. Students seek purposeful learning experiences that are oriented towards them graduating as work- and life-ready. Scaffolded experiences transform their entry skills and abilities through connected and visible pathways of learning. Student expectations are tangible, and demand transparency in the design of their course/programs, that provide immediate line of sight to their end goal.

CourseSpace is a bespoke tool designed with the explicit function of enabling course designers to meet these expectations. Since 2014, it has supported design teams to develop quality courses that demonstrate the constructive alignment between course learning outcomes, the professional standards that drive a course and every assessment and subject. The tool is the pivot in meeting the expectations of accreditation requirements, ensuring a balance between internal requirements and external drivers in a course design by making all alignments visible to the course design team. It has the capacity to map alignments across all elements of the course, to record and collate feedback on each component throughout the process and to support governance committees to oversee the execution of a systematic consistent and transparent process for all courses in the institution.

This presentation tells the story of CourseSpace and the Course Design Process, the intentional design process used at CSU to ensure courses are constructively aligned to deliver meaningful, relevant and quality courses to our students. The presentation will analyse the tool's capacity to meet current TEQSA expectations for course designs that are transparent, innovative and purposeful in meeting student needs and evaluate the impact on course/program design at CSU

Student Centric Lifecycle & Experience

67 - Taking the Guesswork out of Computer Lab Management

Mr Michael Hyde

Labstats

Computer lab management and providing effective and efficient computer services to students requires constant decision making. Lab managers must determine which applications to purchase and include on station images, and where hardware resources should be placed to maximize utilization. The availability of resources must then be effectively communicated to students for resources to be fully utilized. When computer lab management decisions are based on data, lab managers can be confident that false assumptions are not being made.

For this study, we looked at how New York University (NYU) monitored their computer labs. We analyzed what problems they were having and how they used a monitoring software to understand software and hardware usage. We also looked at what type of data was useful, and how different data sets allowed them to make decisions for their student computing resources.

Computer lab space is expensive and those in charge of computer lab management cannot afford to waste it on underutilized stations. Station images can become unmanageable and lab managers must decide which applications to exclude. Locating available hardware can be difficult for students and faculty, so lab managers need a way to help them quickly and easily identify open computers.

Usage data allows identification of software licenses that are being paid for each year but are not being used. This is crucial when imaging stations. Application licenses can be reallocated to different machines or labs where they are more likely to be fully utilized. The data shows which software is used and to what degree and has allowed NYU to negotiate better licensing agreements—more in-line with the actual application use. NYU invests heavily in expensive application packages; application usage data can help when it comes to negotiating renewal prices, and possibly investing money elsewhere. Whether buying licenses on a per-station basis or a campus-wide agreement, this information is key to decision-making. Gathering usage data is the most effective way to solve these problems and eliminate the guesswork associated with managing computer labs

10 - Who controls a Collaborative Learning Space?

Mr Geoff Lambert

Western Sydney University

In 2014, Western Sydney University, like many others, adopted a strategy to increase its collaborative 'active learning' spaces, and decrease its use of lecture style presentations. Timed to coincide with the opening of its new Parramatta City campus in 2017, and Liverpool City campus in 2018, the resulting learning studios however were not like anything seen before. Western Sydney University aspired high, and based on feedback from over 100 institutions who toured the facilities constantly for almost a year following their opening, it delivered very successfully.

Three years on, it is not only the technology in these spaces that has provided useful learnings, but also the user experiences, observation of successful and unsuccessful teaching practices, and the question of who should control a collaborative learning space and how to reflect this in the design of the technology.

In a venue deliberately designed to enable input from any table, presentation from any point in the room, and a rich variety of content sources, learning activities, and group exploration, could it also cater adequately for a transition by academics with a didactic presentation? What about lecture recording? Where or even should the academic sit? How can a student take notes about content not structured into the LMS and potentially erased just minutes later, and what would happen to student performance? Could you successfully involve remote students and guest speakers in to such environments? How could technology assist with this, and when should it just get out of the way and let learning take place, tech free?

Based off observations and interviews, hallway chats, and formal reviews, the Collaborative Learning Studios at Western Sydney Uni continue to both excite, and challenge academics to consider where the knowledge in their classroom originates, and how much control they should exert on that learning. It's still an incomplete journey, but one where the initial idea of being 'student centred' changed the balance of control within these learning spaces and continues to influence the design of future spaces throughout Western Sydney.

92 - Seizing the opportunity for innovation: Developing the international "Visualise Your Thesis" competition
Ms Christina Ward, Ms Ruth McConchie, Dr Julia Kuehns, Mr Wil Villareal, Ms Jennifer Warburton
University of Melbourne
Why does the traditional conference poster endure? In an increasingly digital world where video and animations are the standard for content creation, research communication has moved past the limitations of print. Since 2015, a small team of University of Melbourne librarians has collaborated with the Melbourne Centre for the Study of Higher Education (MCSHE) to hold an annual poster competition for graduate research students - part of a wider 'Researcher@Library Week'. In 2016, this traditional printed poster competition was transformed into an ePoster competition. In 2018, with encouragement from the Pro Vice-Chancellor (Graduate Research), the local competition was launched nationally and generated immediate, enthusiastic national and international registrations (research.unimelb.edu.au/visualiseyourthesis).

The challenge for Visualise Your Thesis participants: to produce an eye-catching and informative 60-second "audio-visual elevator pitch" that succinctly describes their research, and its potential benefits, to a non-specialist audience. The competition is an opportunity for students to build and apply their digital literacy skills, ensuring they are industry ready and publicly engaged. Students work with new copyright and technological constraints to communicate to a broader audience. This sharing of research outside academia in a more accessible format is particularly important in our current information and research climate. Increasing the profile of researchers using standalone, shareable content that allows easy identification of their other work (e.g. ORCID inclusion, twitter handles) extends an invitation to the wider public to join conversations with researchers.

This presentation will outline how a group of busy librarians leveraged minimal resources and strategic relationships to transform a local, paper-based, competition into an innovative international, digital

showcase and competition. This initiative built relationships and capabilities within the University of Melbourne as well as across other Universities involved in running the competition. Visualise Your Thesis puts digital capabilities at the centre of academic engagement discussions and training, showcasing higher degree researchers and their research to the public.

15 - Involving students in a world-class Student Management System implementation - why it makes good sense

Ms Karen Davies

Western Sydney University

Background: The implementation of a Student Management System in any higher education institution is almost alike to a heart transplant. Significant planning with multiple stakeholders is required for the successful transitioning. A key driver of success is the improvements SMS system is expected to bring to students' experiences.

Method: Therefore, the co-design approach, where students review the project whilst in implementation, allows for the students evolving view to be incorporated in design decisions. This directly aligns with University's Securing Success 2017-2020 strategy.

The strategic direction of Western Sydney University is to be 'A Distinctively Student-centred' (Securing Success 2017-2020). The project is giving students a unique opportunity to engage in real life business project with industry experts (Securing Success 2017-2020 – 5.3) - a project that involves reflection of their experience through the University processes. It also gives students a voice via which, they, as future Computing professionals as well as the current system users can provide feedback and suggest possible new improvements, and perhaps solutions. Therefore, it is expected that reviews undertaken by current students for ongoing and future students will positively differentiate students' Western experiences (Securing Success 2017-2020 - 1.1, 1.4, 1.5, 1.7).

Discussion: As Western Sydney University is implementing Banner as a new SMS, it is aligning this implementation to a set of its Guiding Principles.

To ensure the focus remains on improving the student experience Student Centred SMS team is continuing its engagements with a group of the second year, Information Systems Deployment and Management students. The engagement is to explore students' expectations and experiences with the University's current student administration system while utilising user experience frameworks. Students are required to identify opportunities for streamlined processes that are to improve user experiences for all student interactions.

Experiential Learning

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84 - ecoEd: integrating digital tools for environmental sciences in undergraduate curriculum

Dr Chantal Huijbers

Griffith University

Digital research infrastructures such as data portals and virtual laboratories enable easier access to data and analytical tools. Such infrastructures are essential to deliver research excellence that drives innovation, but we also need to ensure that we have a skilled workforce that can use these infrastructures. Therefore,

training and skill development of students, researchers, government practitioners and industry professionals is key to the long-term success of this investment. In Australia, a suite of digital infrastructures has been developed for environmental sciences to enhance our understanding of the natural world and making forward projections into novel conditions. To provide users with a holistic approach to environmental spatial data discovery and analysis, these infrastructures have joined forces to deliver an exciting and innovative new training program. This program, called ecoEd, provides cohesive training and skill development to university lecturers, researchers and industry professionals enabling them to combine theoretical concepts with real-world applications. In this presentation, I will present how ecoEd was developed and the outcomes of the training sessions in which a group of ecoEd Champions absorbed ready-to-use lecture and workshop modules along with tools and knowledge on how to use the platforms. These resources can immediately be used in undergraduate courses that focus on topics such as ecology, biogeography, conservation biology, environmental management and spatial analysis. The training program aims to provide the Champions with the resources and knowledge required so that they can confidently re-deliver the lectures and workshops in their own institutions. As such, ecoEd is increasing the capacity of Australia's environmental science community to advance science and deliver outcomes that underpin the sustainable use of our ecosystems using the latest advances in digital technologies. Moreover, it is enabling first-rate science education in Australia by supporting and nurturing our future scientists. Our learnings will not only be of interest to people working in the environmental science domain, but to anyone aspiring to run training programs related to digital infrastructures.

Barrier-free – inclusive and accessible for all

Mark Bailye

Blackboard

Many institutions are exploring ways to develop learning experiences that are as inclusive and accessible for all learners. As learner diversity continues to grow, so does the need for institutions to ensure that the needs of all learners are considered and appropriately addressed in the learning, teaching and assessment strategies they develop.

In a recent study, one in five students is using assistive or adaptive technologies, often by choice rather than necessity. This demonstrates even more why the learning experience provided must be barrier-free for all learners. Institutions should recognise the value of 'inclusive for all' and investigate how digital technologies can support inclusion in learning and assessment.

So, what does an equable learning experience look like?

In this session, we will explore what a barrier-free learning experience looks like, with a particular focus on best practices institutions are adopting and how Universities can improve their own provision through the effective use of technology. The more accessible it is, the more inclusive and personalised the learning experience becomes. When digital learning is well designed – the closer the parity and quality of learning experience becomes for all learners

V3 - Session information pending

V4 - Session information pending

73 - <u>Data Science in Action: An algorithmic approach to process high volume service data and make improvements to IT services by Natural Language Processing and Machine Learning</u>

Mrs. Wen (Bonnie) Hoschke

Western Sydney University

In today's high education sector, many organisations have implemented IT service management platform to support the service delivery. Currently at Western Sydney University, we have ITSM platform which include a ticketing system as an interface with customer to request for service. With each ticket raised by customers, the service data is able to be collected in the system. Every month there are thousands of tickets processed and handled by various resolving groups via the system. The descriptions for the service requests and solutions are captured in textual form. Some tickets are similar to each other. Some similar nonstandard requests could be converted to standard request that can quickly reach the correct resolving group and treated by formulated solutions to improve service efficiency. Similar incident tickets likely are sharing similar root casue. Group them together can help us to track down and develop the solution to eliminate the re-occurrences or mitigate the impact. There are hundreds and thousands of tickets logged in the system across different months and years. Tickets data, for example descriptions and solutions, are entered by many different users and at various stages. As the descriptions for request/incident and solution are all free input text field, it present challenging to group the similar tickets by basic analytics methods. The high volume of ticket data makes it difficult to group the tickets by manually reading. Here we like to describe the works on using text mining techniques to identify and group the similar tickets together and the experiments on visualize methods for easy interpretation of the results. The methods include using natural language processing for data cleaning, parsing, stemming, tagging, etc. Then using a machine learning algorithm to cluster the data by their text similarity. From the machine learning, each tickets are labelled with a cluster identifer. The results also contain keywords to describe each cluster. With the outcomes from this method, it become lot easier to group similar tickets together by cluster identifier and to produce a recommandation list for task standardisation, incident root cause identification etc.

77 - <u>2.482x10^9: Lessons from a decade of use of learner analytics</u>

Mr Ed Campbell

University of New England

Background: UNE is a regional university with a large cohort (80%) of online learners of the total student cohort (n=22000). Attrition sits midway in the regional comparator group (22.6% in 2014) and the student cohort comprises a significant proportion of highly at-risk students (source: Higher Education Standards Panel Discussion Paper, June 2017). In 2007, the Student Engagement Team began a journey in big data in two key spaces: (1) to identify real-time student disengagement (Automated Wellness Engine); and (2) identify dissatisfied students (eMotion). Subsequent work was undertaken to leverage student sentiment (the Vibe) and discontinuation reasons (Unit Discontinuation Reporting).

Methods: To monitor and react to student satisfaction, a system was developed to allow students to indicate their level of 'happiness' with individual Units of study via the student port (myUNE). To measure student

disengagement, data from each student's interactions with IT systems (Callista, Portal, LMS etc) is mapped against 28 weighted triggers and the top at-risk students are automatically identified. Sentiment is mapped through an interactive word cloud and discontinuation through polling at the point of withdrawal from Unit.

Findings: In 2017, support interventions for identified at-risk students rose to approximately 10,000 incidents for the calendar year, with more than 7000 referrals to specific support providers to both internal (Counselling, Student Administration and Academics) and external (Centrelink, a local health provider for off-campus students). Through a series of Regression Analysis and Peer Review, the efficacy of the system has been validated, and engagement has grown, yet the overall impact on institutional retention is difficult to assess.

Discussion: With the benefit of hindsight, several key learnings emerge. Firstly, the ability to evolve the analytics engine, update data sources and conduct regression analysis as business as usual, would have been beneficial. Secondly, transparency around the collection of data is highly valued and institutional adoption could have improved through a user-facing dashboard and the ability to query the data at the desktop level. And lastly, staff churn (particularly in Senior Management and Sponsorship) is a key challenge to implementation of a model and ensuring long-term viability.

37 - <u>Using cutting edge digital personalisation and machine learning techniques to enhance the student experience</u>

Mr. Piero Tintori

TERMINALFOUR

The expectations of digital natives engaging with a University has resulted in many of the traditional methods of communication being made redundant or at best very inefficient.

The proposed presentation will cover 5 cutting edge techniques that can be used to provide a more personalised digital engagement experience. Why should every student be treated the same or in a similar way? Whether they are a potential student visiting the university website or an enrolled student engaging with online self service facilities, modern digital engagement, machine learning and personalisation techniques can have a significant positive on student experience. This can ultimately improve student recruitment, retention and alumni engagement levels.

The presentation will examine 5 digital engagement techniques that have a proven record of improving the student experience across a number of channels (website, portal, email, mobile and virtual learning environment).

The key discussion points are at what point certain cutting edge techniques used in commercial and ecommerce organisations can apply to a Higher Education institution.

The examples are based on dozens of real world projects with Universities and Colleges worldwide where I have been a significant measurable improvement in KPI results.

KPI improvements can include improvements in student recruitment lead generation results, faster self service capabilities, higher net promoter score results and a more engaged alumni community.

The techniques, which will be described in mostly non technical terms, are based on collecting user activity data as well as additional metadata on the specific person to deliver a highly personalised experience. An easy to understand example is where we examine website activity by a potential student. Based on this activity as well as additional data (location, previous touch points etc.) it is possible come set rules and

machine learning algorithms to deliver a highly focused and personalised experience that will yield improved results (in this example, a higher level of student recruitment enquiries). These techniques can be applied to other parts of the digital journey to increase student satisfaction and engagement

CompNow - Secure, Automated and Intelligent Ethernet Fabric Networks, with Extreme Networks

Kent Plummer

CompNow

Within today's IT environments, the network is often seen as a roadblock to innovation and business agility. Many of these networks are vulnerable to outages and security compromises, lack efficiency and are complex to manage. Surprisingly 85% of enterprises still use the CLI as the primary form of operations. This presentation examines the advantages of moving from a traditional network design to an Ethernet Fabric based Automated Campus solution.

The Extreme Networks Campus Automation solution is a new way to design, operate and manage networks with built-in automation, security and analytics that is far superior to any other technology that exists in the market today. A key element of the Automated Campus is an Ethernet Fabric, which provides a secure, future-proof foundation to deal with today's mega-trends of IoT, cloud, big data, mobility and video.

Ethernet Fabric-based networks are the successor in the campus to a diverse set of protocols developed over the history of networking. Each of these was designed to solve a specific challenge at the time of their development, resulting in a disjoint in the evolution of network functions. These include such popular and widely-deployed capabilities as Multi-Protocol Label Switching (MPLS), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), Protocol Independent Multicast (PIM) and many more – all of which work, in the general sense, but all of which include a high degree of interdependency and complexity that invites the opportunity for error and fragility with consequential unnecessary costs.

Instead, Extreme has applied a single protocol – Shortest Path Bridging (SPB) as part of their Ethernet Fabric solution. The result is simplified provisioning with increased agility, greater security via hyper-segmentation, and a more reliable high performing network that has built-in application analytics. All of these factors drive down the cost of network operations.

This presentation reviews the traditional way of operating multi-tenanted large campus networks and then looks at the modern alternative with an Automated Campus using Ethernet Fabric technology from Extreme Networks.

Future Ready and the New Reality

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26 - What does it mean to be a 'knowledgeable, passionate and skilled' online educator? Teacher Presence as part of the Online Learning Model at CSU

Dr Lindy Croft-Piggin, **Mr Ged Bourke**, Mr Lachlan Kalache

Charles Sturt University

A mixed methods evaluation of the broad scale implementation of an innovative model for improved online teaching and learning at Charles Sturt University found that students clearly rated Teacher Presence as the most important component of the 7 elements articulated in the model. Further, Teacher Presence was

identified as vital to a successful online learning experience. In this paper the planning tools and technologies that underpin successful teacher presence will be outlined and the impact of the role of the teacher on good learning design and learning experiences will be explored. A number of small changes that can trigger significant gains in student perceptions of quality will also be explored and future implications for the ongoing enhancement of teaching presence outlined.

Theories of Online and Distance Education, such as Moore's theory of transactional distance and Garrison's Community of Inquiry, amongst others, have long espoused the importance of the teacher in an educational experience from both a structural and social/cognitive viewpoint. Informed by such research, in 2015 Charles Sturt University's Division of Learning and Teaching developed the Online Learning Model (OLM), with the element 'Teacher Presence' featuring prominently. This framework provided a channel for articulating an engagement-driven approach to online teaching and learning for CSU teaching practitioners. The development and implementation of the OLM model itself formed part of a broader strategic plan, aimed at ensuring competitiveness and viability in the increasingly saturated online learning market.

The most commonly used tools to enhance teacher presence in this project included; recorded lectures, podcasts, embedded videos, dynamic landing pages, virtual classrooms / online meetings, as well as many other tools and approaches aimed at creating the sense of the teacher's presence. Additionally, proactive approaches to online teacher presence may facilitate a more balanced synchronous and asynchronous teacher workload, by exploiting the affordances of the diverse educational technologies available.CSU continues to explore the enormous potential associated with investment in enhancing teacher efficacy in online learning and teaching.

58 - Digital connections - UNE roadmap to improved digital literacies in the HDR experience

Mr Thomas Reeson, **Ms Eleanor Colla**

University of New England

Being a regional university with a largely online Higher Degree Researchers (HDR) cohort has presented the University of New England Library with numerous challenges and opportunities. Our students are geographically dispersed and have disparate discipline focuses with a shared propensity for methodologies inclusive of field instrumentation and remote working arrangements for their theses and research projects. The library therefore needs to equip HDR with digital literacies and an improved capability to conduct their research in the technological/digital realms, as well as different ways in which this content needs to be delivered.

 THETA 2017 presented a need for connected services, needs-based training, collaborative efforts from IT/Library/Research Offices, and a cultural change from top-down and bottom-up. In response to these lessons, UNE started a Research Data Management capabilities project, research support sessions redevelopment and redelivery project, interdepartmental participation in training, and an ORCiD rollout project.

 UNE Library's Research Advisory and Engagement Services will report on their roadmap to the future for HDRs and how a history of distance education and a portfolio agenda of digital dominance and agility has informed how the library has adapted and incorporated technology in content delivery. This is an ongoing effort. We will present what has been achieved in 2017/18 and what is happening right now to move forward to create more digitally literate HDR cohort.

UNE is attempting create a broad capabilities improvement platform for our HDRs, including: research data management, introductions to research tools, academic profiling, and academic/non-academic research communication. Since THETA 2017, UNE has doubled the users for active research data on our central platform and tripled the data stored there, developed, delivered, and refined 5 new researcher support sessions, integrated ORCiD into inductions, and migrated our research outputs repository. Attendees can expect overviews of the UNE ownCloud sync-and-share active research data store, an informal approach to an ORCiD rollout, a formalised repository upgrade to DSpace, our experiences collaborating with areas outside of the library, and the development of a more digital-focused suite of research skills workshops.

33 - XR in Libraries: Beyond the Hype

Mr David Di Muro, Ms Alicia Rogers
Macquarie University

Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR), collectively called Extended Reality (XR), are technologies of the looming experiential age. They are emerging in higher education as disruptive technologies, where their successful adoption depends upon the agile digital literacy skills of everyone.
In response to this, many academic libraries have created XR spaces and services to engage users with these technologies. Rather than wait for access to these technologies to become a user expectation, these libraries are positioning themselves as innovative digital literacy facilitators. But, these will date quickly and continue to feel like an added novelty unless there is stronger direction towards producing visible and evolving output. This is essential to continuing and increasing user engagement and library investment.
In 2016, at Macquarie University Library we set out an open approach in implementing and evaluating XR services with the goal of developing XR competency in library staff and students. Following this we have conducted qualitative and quantitative data gathering exercises and established a dedicated reference group to evaluate the significance of the findings.
There is an absence of institutional standards and best practices within the library sector for acquiring, producing, managing, and preserving XR content. The current acquisition and delivery model conflicts with our traditional preferences and acquisition models. Libraries, even those within academic institutions, face obstacles in acquiring content and output from creators.
Additionally, library staff need to develop their own digital literacies to confidently navigate the XR arena and keep abreast of changes, especially as this is an evolving technology. As library-focused professional development opportunities are currently limited, libraries need to consider development activities with a wider scope.
For XR services to progress, libraries need to consider XR in staff development, wider user engagement, collaboration with faculty and content creators, and development of collection development strategies.

46 - "Power to the people" – informing a transformational strategic vision for learning environments and library services

Ms Gwenda Thomas, Ms Donna Mcrostie
University of Melbourne

Through 2018 Scholarly Services has been on a transformational journey and challenged to consider what a reimagined scholarly service (learning environments and library services) will deliver in the future to support scholarly success across the University of Melbourne. In 2017 an external review made eleven

recommendations touching on most areas of the business across Scholarly Services including core business functions, space, business process improvement, visibility, optimizing resources and communication (internal & external). The Review provided us with a foundation to develop a program to plan services and partnerships to make a transformational impact across the scholarly information environment and enable a next generation of scholars to be productive in a digital world, considering the rapid changes across the tertiary sector and within the university. In 2018 under new leadership and with the outcomes of the review in hand we turned over the planning of the possibilities into the expert hands of our campus community and commenced an intensive HCD (Human Centred Design) project to inform our transformation and guide our decision making.

The ENGS (enabling next generation scholarship) CX (Customer Experience) Transformation Project was established to explore what scholarly services and success means to our community, how we can better enable next generation scholarship, our value proposition and identity to inform strategic planning for 2018-2020. As part of the research phase of the project, we sought to understand the strategic academic, research and engagement aspirations and expectations of Chancellery in relation to scholarly success and our service offering alongside the undergraduate and graduate cohorts experiences and needs. These lived experiences and strategic perspectives were bought together in the research phase of the project to inform priorities and opportunities.

This presentation will outline our HCD approach to developing a strategic plan and our journey to build sustainable and scalable services outlining lessons learned and how our community from senior executive to undergraduate students have informed our future forward customer-centric strategies when the only constant is change.

In Unity is Strength

12 - Dynamic and immersive visualizations of library user research activity using data from EZproxy log files
Mr Peter Green, Dr Pauline Joseph, Ms Amanda Bellenger, Mr Aaron Kent, Mr Matthew Robinson
Curtin University

It is common for academic libraries to manage authenticated access to their extensive scholarly journal and e-book subscriptions through a 'man in the middle' URL re-writing proxy service called EZproxy. This software solution has been widely deployed in libraries and has been a standard solution to authenticated access to third party subscription scholarly resources for many years.

In the process of managing a library user's access to the third party scholarly resource the EZproxy software creates a log entry for each web request in the Combined HTTP Log format. The Curtin Library has retained at least five years of the log files which are extensive, with approximately 30 million lines written per month. The log files capture information for each request such as the IP address, client ID, date and time, HTTP request and response and so forth. This is information that is rich but difficult and challenging to comprehend due to its size and technical complexity.

However this large dataset presents an opportunity to learn more about the information seeking behaviour of Curtin Library clients, but making sense of the data without losing the richness is a key part of the

challenge. Traditional analysis of such data tends to produce flat aggregated usage statistics that do not reveal the complex interactions of individual user searching activity across time and space.

In collaboration with Dr Pauline Joseph, Senior Lecturer (School of Media, Creative Arts and Social Inquiry) and with funding from the Curtin HIVE (Hub for Immersive Visualisation and eResearch) Research Internships program to employ a computer science student for a ten week period the Curtin Library undertook the project of creating visualisations using this rich data of user research activity.

The resulting pilot visualisations give an insight into the power of dynamic and immersive visualisations to reveal new understandings of the information seeking behaviour of Curtin Library clients.

19 - A series of fortunate events: a decade of shared service delivery and a new era of inter-organisational collaboration

Mr Heath Marks

Australian Access Federation

Background: Collaboration in research and education is more important than ever. It begins with authenticating the identities of collaboration partners. Ten years ago, CAUDIT created the Australian Access Federation (AAF) as a national response to inter-organisational authentication challenges and to enable universities and research organisations to share teaching, learning and research infrastructure without the liability of managing credentials for external users.

Method: A new era of collaboration commenced between Australian research and education organisations with an agreed policy framework and common technical standards (noting different implementation approaches).

AAF faced a 'chicken-and-egg' scenario. Organisations issuing researcher identities wanted access to electronic resources (services) before joining. Likewise, service providers wanted the Federation to expand their customer base.

Through an extensive awareness and education campaign and strong leadership from a small, committed group of influential champions, the Federation eventually reached a tipping point. The Federation became the preferred way to connect scholars with the services they needed and growth became less resource intensive.

Findings: The journey to sustainability has paid off with lower barriers to inter-organisational collaboration and the growth of discipline-specific and multidisciplinary research hubs. AAF's underpinning authentication service has accelerated the adoption of federally funded research infrastructure initiatives such as the creation of virtual labs by NeCTAR (now ARDC).

Transformational initiatives need extensive outreach to achieve success. This work never completely disappears. Even after crossing the tipping point, key people leave customer organisations so service providers must regularly reinforce the value of their offerings.

Discussion: By building on past successes, the AAF is well-positioned to deliver sustainable shared services in an increasingly sophisticated and unpredictable research and education landscape. New services such as the Open Researcher Contributor ID (ORCiD), international federation connectivity through eduGAIN, and cloud platforms for federation have much further to travel along the adoption curve.

This presentation discusses the challenges of bringing shared services to the education and research sector and explores the methods that have successfully enabled sophisticated international collaborations like the Murchison Widefield Array telescope.

28 - Visualising Strength of Institutional Collaboration Using Enriched ORCID Data

Mr Melroy Almeida[1], Dr Amir Aryani[2]

[1]Australian Access Federation, [2]Research Graph

Background: ORCID (Open Researcher and Contributor ID) is a persistent identifier for researchers that connects them to their research contributions. The connections between researcher, research output and affiliation with organisations matter, because research progress is based on the communication of ideas – between individuals and organisations – and research credit and careers are built on the quality and success of those communications. ORCID is helping to facilitate research visibility for researchers globally, identifying experts and enabling greater collaboration. Today's global environment allows for universities to unite across national and international borders and work towards the common goals of research and learning. Collaboration allows them to forge partnerships and pool resources to align themselves strategically with innovative efforts in the field.

Method: In a recent article in Nature Scientific Data [1], an open access graph was published that captured connections between Australian research datasets, publications and grants linked using the Research Data Switchboard. The authors use this graph along with other datasets including ORCID IDs to map the collaboration between universities nationally and globally.

Findings: The result of the above work is a newly established link that demonstrates the following connections:

- publication → researcher (ORCID) → affiliation → university
- publication → grant → researcher (ORCID) → affiliation → university
- dataset → researcher (ORCID) → affiliation → university
- dataset → publication → researcher (ORCID) → university

Using these links, the authors have built a network showing the strength of collaboration between the different Australian universities. In addition to national level connections, collaborations with international research institutions can also be viewed.

Discussion: The graph will map the strength of collaborations between institutions nationally and internationally. Does collaboration strength depend on geographical location or specialization in similar disciplines? In the presentation, the authors will discuss the answers to the above questions and more using the graph developed.

35 - Getting Started on Training

Ms Ingrid Mason, Dr Frankie Stevens

AARNet

Developing new knowledge and learning new skills can be as challenging and revitalising as a mountain climb. AARNet has found that by tackling different workplace terrain (training) working with new partners (librarians), we have gained insights and a new view of the academic world, and the rewards have been manifold. AARNet continues to build networks within and beyond the Australian continent to support Australia's research and education, and works in partnership with the international National Research and

Education Network (NREN) community and industry. More recently AARNet has been building up data movement and network know-how capability within the library community in partnership with colleagues in Australian academic libraries and in eResearch.

As academic and studying practices become increasingly data and technology intensive, the collective challenge is to aid with upskilling the enablers, the library workforce, and to work collaboratively. Librarians are experts in training students and academics (as part of their support for digitally enabled teaching, learning, and research) how to curate and manage data and how to use an increasing array of digital services, infrastructures, and tools. AARNet aims to feed training developed around data movement and network know-how into the Digital Dexterity program delivered through the Council of Australian University Librarians (CAUL) and into the Skilled Workforce and Partnerships program delivered through the Australian Research Data Commons (ARDC). In both partnerships, the training is developed and targeted at the trainers, and the where the areas of impact and interest overlap. For example, the emphasis for CAUL is on ensuring Australian graduates have the digital skills embedded in their learning and research to thrive in a work context and to become effective citizens and for the ARDC it is on the research support workforce that enables researchers to leverage data and technology in their research practices.

This presentation will cover the strategic rationale for AARNet's new training initiative to contribute to skills development in the academic community, the lessons learned and the benefits arising, by forging new working relationships, partnering, and collaborating.

Student Centric Lifecycle & Experience

76 - Mobile Ecosystem - How UON Is Providing a Personalised Experience for Students and Academics

Mr Alex Dare

University of Newcastle

Universities have complex systems, spread between departments, buildings and campuses. Managing these systems is complicated and time consuming and providing students with access to them can be difficult - resulting in a frustrating experience for the user and institutional inefficiency.

Students expect a connected university experience, with access to important information at any time that is relevant to their specific needs. They expect to move seamlessly from one device and one service to another without having to repeatedly log in to different systems or fill out personal details to get the information that applies to them.

UON has developed the myUON Mobile Ecosystem as a platform to provide students with a personalised mobile and web app experience. The app provides a single access point to key university systems as well as surfacing key information and tasks requiring action from these systems natively within the app, thereby driving engagement with the platform. Once a user is logged in, information such as what and where they are studying, whether they are domestic or international, what stage of their academic journey they are at and whether they are staying in university halls of residence is all relevant in personalising content, messaging and communications to a specific individual. This personalisation drives engagement as evidenced by the 40 plus thousand registrations and 5 million app sessions since launch in Feb 2018. With a view to further driving ownership and engagement, UON have recently deployed an ideas capability within the app to ensure students can log and vote for ideas for future enhancements to the app.

The latest release of the app saw a number of students contribute to the design, further engaging them on the journey.

UON is currently working on extending this to a staff version of the app with an initial focus on providing research academics with a similar personalised experience focused on information and research related tasks requiring their attention.

93 - Using business process analytics to leverage insights from student journeys

Prof. Aditya Ghose

University of Wollongong

There has been considerable research (and industry activity) on the problem of business process analytics over the past two decades. These results have important applications in understanding student experience in journeys through - for instance - a university degree, but these have received very little attention.

The original incarnation of this problem was in the form of process mining, where the intent was to reverse engineer (or learn) the best-fit process model from execution histories recorded in the form of a process log. Each entry in a process log records the task done, the time-stamp when it was done, and sometimes who did the task (the resource). Process mining technology is now mature, and its use in business computing quite routine.

More recently, there has been progress on the more general process analytics problem where the intent is not only to mine process models from data but also task post-conditions, goals, optimal resource allocations and so on.

The application of these technologies to understanding student journeys offers many tantalising prospects. Examples of questions that could be answered include:

1. What are the common pathways taken by students pursuing a given degree?

2. What is common to pathways that lead to successful completion? This will provide pointers to the kinds of advice that can be given to students.

3. What is common to pathways that lead to negative outcomes (students dropping out, failing etc.)? These can serve as anti-patterns. Monitoring for these anti-patterns can be used to flag potential problems in specific students.

4. How might we correlate pathways with student goals?

5. If the current partially-complete journey of a student suggests that the outcome will likely be less-than-satisfactory, what is an optimal fix that improves the likelihood of a positive outcome?

6. What are the optimal resources to deploy to achieve a positive outcome (a student might enjoy working with a given instructor, hence including subjects taught by that instructor might help)?

Much of the hard work involves mapping student milestones to task completion events in the process log. Ultimately, these technologies can significantly improve student outcomes.

13 - Meeting Students Where They Are: Learner-Centering Foreign Language Study with Learner-Generated GIFs and Videos for Innovative Peer Motivation, Feedback and Assessment

Mr. David Hill

Macau Polytechnic Institute

Background: The gap between student and teacher use of technology in Macao can de-motivate all involved. Students' prolific use of smartphones can clash with school policy and teacher preference. Rather than forbidding use of technology that students already enjoy, why not enhance tertiary language learning by incorporating it?

Methods: To introduce educational technology proven 1) simple enough for teachers to learn quickly 2) already familiar to students and 3) most conducive to efficient language learning, the author reviewed a range of user-friendly technology applications for language learners to demonstrate their accustomed gadget creativity, create learning aids and share this supplementation with classmates, during and between classes.

Findings: Students are more motivated using multimedia resources, but teachers often choose the games, videos and GIFs. With https://coub.com/ and https://flipgrid.com/, learners choose a topic or skill from textbooks, then make ten-second Coub GIF loops or one-minute FlipGrid videos on smartphones or tablets. Lesson aims are reinforced, while student-centeredness is guaranteed. Interaction patterns that could never exist in conventional classrooms become routine, ensuring peer motivation. Because these videos and GIFs are easily collected and archived, assessment is simple and fast, while feedback is given using the same media. Motivation comes from all sides, not only from teachers; feedback and assessment become more efficient.

Discussion: New technology applications will forever come with new problems to solve, and it's an ongoing learning experience for this author to offer solutions through action research -- virtual worlds, AR, VR and XR -- a serious commitment to never going back to the ways that languages were taught 100 years ago. The

community of Flipgrid users on www.twitter.com makes the surprises not so surprising. One outgoing student assumed to readily use Flipgridactually refused. The author was advised to use Hyperdocs with Padlet as a way in. Videos and GIFs are unavoidable in almost every gadget and website; most students enjoy learning at the top of Bloom's Taxonomy.

PRACtical UX approaches to increasing quality in learning sites

Kim Vincent, Lynnae Venaruzzo

Western Sydney University

Learning sites in Universities often vary in terms of quality and design, depending on the individual skills of academic staff and the supports they have available to them. At Western Sydney University, the development of quality learning sites has occurred at different rates and has resulted in idiosyncratic designs. Learning sites are the primary technology space students access for their Learning Guide, assessment information and activities and learning materials, however the student experience varies significantly. The consistency of information provided to students varies within courses, and is compounded when students are studying double-degrees or taking electives.

A quality benchmarking initiative identified the need to improve visual and structural consistency across learning sites. A UX approach was central to improving the student experience using three major design principles: PRAC (Proximity, Repetition, Alignment, and Contrast), student-centred design thinking, and a scaffolded instructional design framework.

This paper will explore these three design elements and their impact on learning design and student engagement. We will present the functionality and features of a learning site template designed to be used for all sites used across the university, as well as feedback from students and academics about its effectiveness. We will also present on support mechanisms that are in place to achieve this institutional-wide initiative

Experiential Learning

87 - 'Beaker, don't set the lab on fire!': A Muppet-based lab preparation game to enhance student preparedness and engagement for laboratory sessions

Mr Yuri Banens, **Dr Jennifer Wilson**

Griffith University

Background: Laboratory work enriches the bio/chemistry learning experience but requires maximum input and engagement from teacher and learner. Students are generally underprepared for labs, leading to confusion, wasted time and expense. Traditional means of encouraging students to engage with pre-lab materials were unsuccessful. Our solution was to develop a series of adaptive video games that lead students, step-by-step, through the laboratory experiment to integrate, streamline and simplify their pre-laboratory preparation.

Methods: The pilot game was based on a Gel Filtration Chromatography laboratory exercise presented in the Smart Sparrow adaptive learning platform (2018). Students engaged in a job interview scenario with Muppets assisting in the process. Students entered three doors sequentially: theory, equipment and

procedures, and quizzes. In the final door, Beaker must be saved from the clutches of Kermit's evil nemesis, Constantine. Each summative question releases his chains and contributes towards the assessment. Screens contained images and text from the lab manual, embedded videos, clickable information buttons and formative quiz questions. When a student submits responses to the questions, tailored feedback is provided. Once the game is complete, a record of completion is returned to the LMS and the student receives a small number of summative marks towards the subject.

Findings: Median time and % completion: 1 hours 28 minutes , 94% ; 77% average grade (n=220). Feedback was exceptional; students enjoyed the lesson and reported that they felt much better prepared, however they identified issues with pacing and question logic that weren't optimal.

Discussion: The application of fun gaming concepts such as relatable characters and having a high-stakes 'mission' is effective in improving student engagement and laboratory outcomes.

One valuable aspect of Smart Sparrow is its ability to report student pathways through the lesson, highlighting where they retried questions or left the lesson, indicating where concepts are difficult or need to be better explained. Moreover, the game was not expected to be a revision tool for the final lab exam, however students adopted the game for this purpose. Further game development will include addition of more game elements such as achievement badges and leader boards.

100 - <u>Finding space, redefining space, keeping it simple: Rebuilding teacher agency through experiential professional learning about curriculum design for distance and online courses</u>

Dr Sarah Stein

University of Otago, New Zealand

Background and Methods: When on-campus courses are redeveloped to online-distance mode, teaching contexts change. As a result, teachers' self-efficacy and agency are affected. This small study explored the experiences of 40 academic teaching staff who participated in a workshop that aimed to facilitate the (re)design of their on-campus courses for teaching at a distance. Comments were invited about similarities or differences from face-to-face teaching, and reflections on how those views may have come about.

Findings and Discussion: A challenge for these teachers was their understanding of "space": from the physical to the virtual, raising their awareness of communication and interaction processes. Well-versed practices became unreliable and unpredictable, routines were upended, roles and responsibilities had to be modified and technologies used differently. The teachers' sense of agency was threatened.

With experience that comes from application, teachers realised that moving to a distance context meant that the changes to their sense of space allowed innovative practices to emerge. Simple, but clever uses of technologies within a well-designed course were keys to manageability of teaching, engagement for students.

Teaching is a practical activity. The workshop provided space for the teachers to engage in one aspect of activity, namely, course (re)design. The environment was created for the teachers to worked on their own courses. They did not simply hear about course planning but engaged in it. The experience meaningful, relevant and worthwhile. The learning gained from implementing their distance courses affected on-campus teaching as well. While the context change had a destabilising effect on the teacher's sense of self-efficacy, it was also the catalyst for teachers to question assumptions about teaching, courses, students, interactions, communications and technologies. The act of teaching, in turn, enhanced and developed the teaching.

In this short presentation, evidence in the form of excerpts from the teachers' comments are used to illustrate the ideas outlined above. The study thus provides some foundation for exploring threshold principles or the tipping points underpinning and enabling effective moves to online and distance teaching contexts.

103 - Pedagogy Before Technology: Eye Tracking and Mobile Video for Enhancing Speech Pathology Training

Dr Michael Cowling[1], Mrs Judith Broadhurst[1], Dr James Birt[2]

[1]Central Queensland University, [2]Bond University

Video is being increasingly used as a training tool in higher education. Watching videos provides participants with the ability to review a situation multiple times, pause at key points, and answer questions related to practice that can be reviewed. Where fixed point-of-view videos provide information about the context and general direction of view, it is often unclear whether the attention of the student is appropriately focused in the video. Understanding the focus of students' attention is especially important in disciplines such as speech pathology, which require the observation of multiple sources of information. Paying attention to small facial movements, posture and the therapy task are vitally important in giving the right therapeutic advice. Utilising video feedback presents a unique challenge because the clinical environment of speech pathology practice is constantly changing, with the clinician required to continuously shift attention between multiple factors (physical space, people and activities) within the whole clinical context. The inability to quickly monitor the clinical situation may contribute to university speech pathology students reporting that they are unprepared for work-integrated learning and receive insufficient feedback on their clinical competencies early in the curriculum. Research gaps also exist in understanding the role of clinical educators in providing feedback and the factors that limit that feedback. There is a clear need for better analytics and data, as offered by technology, to help understand how novice students experience speech pathology education. This project will investigate how technology can be used most effectively in providing speech pathology training. Using a pedagogy before technology approach, it will present an analysis of current speech pathology education practice, and propose a technology intervention that could help to enhance this practice through the positive use of technology. Specifically, the use of eye tracking technology through depth sensing cameras and mobile devices will be discussed. In the future, this work will then be used to produce a set of guidelines on the use of technology devices such as iPads and the use of new 360 video in this revised analytic approach.

89 - Augmented Reality based Laboratory for Geotechnical Engineering Education

A/Prof Jayan S Vinod, Mr Ross Franks, Mr Joshua Hummel, Mr Daniel Judge, Mr Dhammika Ruberu

University of Wollongong

We have chosen AR as the most suitable technology due to four key reasons, namely AR enable us to:

- Bring large laboratory equipment to tutorials that is impossible to do in real life
- Allow students view the equipment in detail allowing us to hone in on the key components as they appear in real life and to scale
- Allow student interaction with the equipment that is not normally possible in laboratory classes due to OH&S reasons and large class sizes.
- Boost student engagement through interactivity, motivating them to be independent learners

When developing the prototype simulation to carry out Direct Shear Test, we have started the process by creating a 3D model of the testing equipment using Blender. To bring authenticity to the 3D model and to enhance the student experience the model had realistic colouring and an aged look applied to it using Substance Painter.

In this project, the key challenge was to design an effective system interface where only the user's gaze, voice, and hand gestures can be used as inputs. As most users of this tool will be unfamiliar with AR, the interface needed to be intuitive and has to ease them into working with AR objects. Therefore, a workflow has been developed to capture a 2D version of user's visualisation in AR for any additional and accurate assistance.

Expected outcome of this project is a user-friendly AR software for geotechnical laboratory experiments. We aim to pilot the application in Autumn session of 2019.

> **The Smart Campus – Digital transformation and innovation**

72 - Virtual Scientific Tour of Environmental Locations

Mr Ghaith Zakaria, Dr Sonia Wilkie

Victoria University

Scientific Tours, site visits and field trips are considered a key pedagogical element when teaching STEM units, fostering and enhancing students learning by providing hands-on and experiential learning experience. The Hive is Victoria University's innovation space whereby staff collaborate on the design and development of engaging, innovative teaching and learning strategies and activities. The Hive also hosts many visitors who are interested in learning about and applying these methods, innovations, and technologies.

Our visitors range from secondary school students, to internal and external undergraduate / graduate students, to staff from other institutions. Therefore, in order to cater to a wide range of visitors with interests in different fields, applications, and at different educational levels, we need to design the experience and present the information in a method that caters to these many factors accordingly.

Augmented Reality (AR) / Virtual Reality (VR) experiences can be customised and personalised to suit different audiences (Chen and Fragomeni, 2018). Furthermore, AR/VR experiences have been found to increase student engagement, motivation, interaction and collaboration in tertiary education environments (Bacca, et. al, 2014). As such, we developed a series of AR/VR experiences to provide a tour of The HIVE space which showcases examples of the innovative learning and teaching approaches that are being implemented to enhance student learning, understanding and to inspire and promote active learning strategies for academics.

In this presentation we will showcase an AR/VR experience that was designed and developed to provide a tour of The Hive. The experience draws on a suite of tools including HP reveal, Metaverse, 360° videos, H5P, Jigspace and other discipline specific tools such as GeoGebra used for Mathematics, Night Sky used for Astronomy and Environmental Science, Hudl Technique for Sports and Biomechanics, and The Brain AR App for Anatomy. It also incorporates hands-on object-based learning experiences with 3D-printed models; for instance, 3D-printed chemical molecules, anatomical models and mechanical models.

Creating such experiences can be expensive, technologically challenging, time-consuming, and can demand high digital literacy skills. However, the tools used to develop this AR/VR experience provided a cost-effective, user-friendly interface that requires minimal technological skills and equipment by utilising the visitors' mobile devices.

62 - Developing online modules for teaching students research skills: Formative student focus group outcomes to inform design and content

Dr Yasmine Probst, A/Prof Eleanor Beck, Dr Annabel Clancy, Ms Pheobe Starling, Dr Elizabeth Neale
University of Wollongong

A move toward technology enhanced learning can provide support for learner-led learning within a practice based subject. Within the Nutrition and Dietetic discipline students undertake theoretical learning the year prior to completion of a major research project. At a key stage of transition in a student's learning, the method of learning in the final research subject is largely experiential and a culmination of learning across the course. Learning of research skills, however, cannot only be completed in a theoretical manner but should contextualised to practice. Research skills are key to Nutrition and Dietetics and many other science-based disciplines though the students are challenged when applying theoretical research concepts. This study forms the formative work for a larger project that is developing online learning modules for research skill development. The aim of this study was to explore student preferred methods of learning research skills as well as their confidence and perceptions of the skills needed. Past and current Nutrition and Dietetics students from the University of Wollongong were recruited to four semi-structured focus group sessions. Transcripts were coded in duplicate, and key themes identified. Students expressed a preference for a self-paced learning style encompassing interactive components. Learning through experience emerged as a dominant theme from the focus groups. Difficulties were identified in relation to defining the research question, data cleaning and analysis as well as thesis writing. Student confidence was related to planning and preparation, supervisor support, existing resources, prior learning and previous experience. Addressing challenging areas of research in a form that enables students to feel confident and prepared appears to be key in supporting Nutrition and Dietetic students. The outcomes of this study have formed the basis to the iterative development of preliminary online modules for general research skills, statistics, data management, research communication, reflective practice and pastoral care which will be evaluated over time with upcoming students within the Nutrition and Dietetic courses.

3 - Design Principles for Developing Online Interactive Activities

Dr Sonia Wilkie, Mr Ghaith Zakaria
Victoria University

Online Interactive Activities are becoming increasingly popular at many universities as a method for introducing Blended Active Learning experiences. The advancement of technology has meant that the software toolkits which are used to develop the online interactives no longer require experienced multimedia designers to create content. Teachers and Educational Support Staff now have the power to design and develop their own activities. Whilst many people understand that skills and knowledge surrounding the use of the tools and the technical parameters need to be learned, elements of design also need to be considered and appreciated for the development of quality learning experiences. In this presentation we consider design principles to prompt active learning and encourage student engagement.

The design principles include consideration of Cognitive Load Theory and how the theory impacts on student learning; Consideration of the different presentation methods and sensory modalities used to acquire the information; Selective inclusion of key information; Segmenting content into bite-sized portions which allows the learners to engage with the content with minimal distraction from external factors. Presenting the information as bite-sized portions also increases sustainability of the modules as the small portions are easily transferred and adapted across different subjects; Incorporating active learning strategies via the different interactive functionalities and student Check your knowledge activities at regular points which assist learners to gauge their comprehension, allowing them to scaffold their own learning and prompting revision of concepts which they have not yet grasped;   and finally consideration is how the online interactive activities are scaffolded across the subject, and on a broader level across the course to ensure familiarity, diversity and novelty.

Examples demonstrating these design principles applied to H5P Online Interactive Activities and the impact it has had on student engagement and their assessments at Anonymous University will be presented at the conference. Anecdotal evidence further demonstrating the impact on student learning from both staff and students has been positive and is also presented.

86 - IT Services Emerging Technologies - Smart Campus & Digital Transformation initiatives

Mr Anthony Molinia

University of Newcastle

The University of Newcastle has invested hundreds of thousands of dollars in providing high quality wireless infrastructure and solutions to satisfy students and staff that now expect a connected university experience, with access to important information at any time, relevant to their specific needs, from anywhere, on any device. This broadly falls under the Strategy iCampus initiative.

iCampus is about enhancing the on-campus experience through a range of assisting technologies. iCampus will deliver solutions for wayfinding, space use optimisation, transport timetables, traffic maps, physical security, facilities maintenance and smart parking in concert with the surrounding Smart City and regional services.

UON has invested in mapping and wayfinding technologies that allow students and staff to find a room or location and have turn by turn directions, even within buildings. Integrating these technologies within our mobile ecosystem with class and exam timetables, pc lab availability, facilities and hr systems for staff and service directories, takes the stress out of navigating large distributed campuses particularly for new students. We are augmenting these mapping technologies, replacing static campus maps with rich map-based experiences such as live shuttlebus location tracking, parking space availability, and 3D interactive maps for areas of high interest. This technology extends beyond personal devices as the endpoint, with smart signage at carparks showing parking spaces available and at bus stops showing next service departing. UON are also applying this technology to aid administration and management with use cases such as asset tracking for accessibility support assets; and in the near future capturing class attendance data using WIFI and BLE Beacons for verification where mandatory minimum attendance is required. These technologies not only improve the user experience, they also provide the University of Newcastle with vast amounts of data. This data enables analytics and leaning and provides the UON with information to better plan space utilisation, understand student participation and engagement with their learning and enhance its offering.

Future Ready and the New Reality

88 - Smashing the data storage crystal ball

Mr Gregory Ryan

Griffith University

In 2017, Griffith University went out to market to replace the aging Tier 1 Storage Array which provided their enterprise level storage requirements.

As part of the criteria for the replacement was the desire to move to using On Demand capacity to allow the storage team to provide 'just in time' storage capacity instead of having to forecast users needs.

Due to the ever changing needs of the university especially where research projects are concerned trying to accurately forecast the projected storage was like using a Crystal Ball.

Moving to On Demand would allow us to adapt rapidly to the future business needs however moving from a traditional Capital Cost purchasing model to Recurring Cost purchasing presented a roadblock to the purchase process.

This presentation will address the challenges that were faced in changing entrenched purchasing attitudes and the arguments used to overcome them including:

- Changing the attitude of management to ODA model

  + How to sell the benefits of On Demand vs Traditional Capital purchase

    > Opportunity to govern our usage and within limit

    > Ability to upgrade to meet the organisations storage needs

    > No need to 'sweat' the assets beyond their standard life to

      write down their book value

- Lack of confidence due to not having asset ownership

  + Entrenched view that assets needed to be owned so

    that we could maintain control.

    > Had to provide assurances from the vendors on how

      On Demand assets were controlled and that areas such as insurance were covered.

- Government regulations and guidelines which were antiquated

  + Lease agreements were not allowed under the regulations

- Concern over relationship with Vendors (under an ODA model the organisation doesn't 'own' the asset so concerns were raised such as what if the vendor goes out of business).

  > Required that we build up a company profile for the vendor to build confidence in their longevity

V5 - Session information pending

99 - Evergreen is the new black: Succeeding in the 0365 ecosystem

Louise Howard

Griffith University

Background: In late 2017 Griffith University established a strategic partnership with Microsoft, the first of its kind for an Australian University. In 2018, as one of the first initiatives in this partnership Griffith successfully migrated more than 7000 staff and 65,000 students from Google to Microsoft's O365 Productivity suite.
Methods: The presentation is a single institution case study of the implementation of O365 in a large Australian University, with a focus on the selected governance approach, rapid deployment and adapted model for managing ICT change in an evergreen environment.
Findings/Discussion: In a world of increasing cybersecurity threats and a hyper focus on information privacy Griffith University is finding ways to address the challenge of balancing functionality maximisation, establishing appropriate governance and ensuring a positive end-user experience.
While already operating within a cloud platform, Griffith University decided that during the migration from Google to the O365 Productivity suite Griffith staff and students would be combined into a single Microsoft tenancy. This approach has created exciting opportunities for reshaping pedagogical and research collaboration experiences while posing new information governance challenges for the University. While the migration was a major technological undertaking, Griffith approached the project as a digital enabler, creating opportunities to deliver no-code and low code tools to citizen developers and expanding the digital capability of academics, students and researchers. An enterprise wide cross-representational approach to decision making was established early in the project, successfully enabling agile configuration and governance decisions to occur throughout the project.
The evergreen environment of the O365 space is now driving an evolution in the speed and approach to ICT changes and decision making. Our approach positions the University to leverage our technology investment to support Griffith's Digital Strategy and implement initiatives based on AI and analytics.
This presentation will share the lessons learned through the migration and explore how Griffith is managing emerging challenges and adapting internal models to succeed in the new digital ecosystem.

45 - Taking it to the people: enhancing staff engagement through human-centred design
Ms Andrea Philips, Ms Kylie Tran
University of Melbourne

Scholarly Services at the University of Melbourne is developing a new strategic future that will transform library and technology-enhanced learning services to take support for the University's learning and teaching, research and engagement to the next level. Ensuring that our staff are fully engaged with this new future is essential for the successful imagining and implementation of this strategy.

This presentation will describe how we have utilised a human-centred design (HCD) approach to understand more richly the broad internal communications themes that emerged in a 2017 organisational review and respond to these more effectively. The review identified that work needed to be undertaken to develop a stronger organisational identify amongst our staff, with opportunities for enhanced shared purpose and increased collaboration. An HCD approach has been used to dive deeply and understand the issues from the staff perspective and ensure that the response   meets their needs and resonates with them. It is essential to our success that these measures were owned by staff rather than imposed by management. Over a two month period a representative staff working group utilised the 'double diamond' research and ideation methodology and techniques to develop and test hypotheses and develop a response. The voice of staff

across all areas of Scholarly Services and at all levels was researched through a range of interviews and focus groups, and new ideas were generated through ideation and prototyping.

The outcome of the process is an innovative staff engagement framework that will drive effective internal communications, leadership at all levels and building of shared identity and purpose. The framework provides the vital link between our staff and our new strategy and will help bring the strategy alive through shared participation, understanding and commitment. A range of initial measures are being implemented and evaluated, including a new website for staff, revamped newsletter with content and design driven by staff, integrated framework for communications cascading through all levels and messaging packs for team leaders. Ongoing use of the HCD-approach to evaluate and fine tune our staff engagement will help ensure that our unity will indeed be our strength.

> **In Unity is Strength**

8 - Collaborative Repository for 3D Printable Designs - The Open Heart Project

Miss Amanda Miotto[1,2], Dr Jo Pauls[3,4]

[1]Griffith University, [2]QCIF, [3]University of Queensland, [4]Prince Charles Hospital

A medical engineer presented us with a unique challenge. His team wanted to collaborate worldwide on designing 3D printable heart pumps - while keeping the designs open source and affordable for third world countries.

Background: Currently research is often undertaken in isolation within each laboratory, limiting collaboration and thus the full potential of the Mechanical Circulatory Support (MCS) field. There was a clear need and untapped potential for improved collaborative efforts, improved education and standardization and subsequent improvement of research quality and outcomes within the field.

The repository needed to be easy to use and learn, adaptable for different technologies, low-cost and sustainable long term. The system needed to include not just the files for the 3D printers, but testing data, testing code and human-readable information about the mechanics.

Method: Combining a workflow of technologies with sustainable solutions, we were able to provide engineers with a way to share their work with a low barrier to entry. This platform was named OpenHeart. The platform incorporates web-based version control and documentation mechanisms, with attached collaborative tools providing networking opportunities, discussion space and educational material for upskilling.

Coupled with this was the dual copyright licence, protecting both their programmatic code, their intellectual designs and testing data using both a Creative Commons (CC-BY 4.0) and Open Source licence (BSD-3-Clause). This protects not just the designs of the heart pumps themselves but the code that resides in the 3D printable file. Paired with the licence is unique URLs and DOI minting for publication purposes, encouraging reuse and transparency.

This system offers access to the current developments in the MSC field for researchers in developing countries with a low barrier of entry. By sharing existing solutions (e.g. experimental set-up, data analysis strategy) it will be possible to save research time and money while giving emerging researchers a head start. Discussion: This presentation will discuss how we leveraged traditional version control systems to provide a novel approach for researchers with in-built reproducibility and collaboration mechanisms. We will also discuss how this approach can be adapted for other situations.

30 - Integrating ORCiD with corporate systems using a One Team approach: a case study at the University of South Australia

Mr James Moyon, Miss Cathy Mahar

The University of South Australia

Background: In 2015-2016, the Library collaborated with key stakeholders within the Institution to successfully deliver a streamlined and bespoke system to collect and manage research outputs, and to report these to the institutional repository and downstream systems such as the corporate data warehouse for internal reporting. With forty percent of staff having an ORCiD but no indication of the optimisation of the profile, an ORCiD integration became a prioritised project, further maximising the timely capture of new research outputs with minimal effort by researchers, and futureproofing the University in anticipation of funding body requirements.

Methods: Library and Information Strategy & Technology Services (ISTS) partnered to develop, implement, and integrate ORCiD iDs into various University systems in line with ORCiD's Collect & Connect Program. Using a phased development approach, ISTS developers implemented the ORCiD registration and authorisation processes, created interfaces to push authorised iDs into other systems, and automated the enrichment of the Employment and Works sections of researcher's ORCiD profiles. These interfaces contribute the researcher's UniSA affiliation, and their research outputs, which are sourced from the UniSA Research Outputs Repository (ROR). The last phase involved harvesting research output metadata contributed by trusted external systems such as Crossref and publisher systems from a researcher's ORCiD into ROR.

Findings: ISTS developers quickly upskilled their knowledge of ORCiD and Library discovery systems to identify, scope, design, and develop the proposed integrations. Library staff provided support by populating schema crosswalks between ORCiD, ExLibris' Alma and Primo, and EmpowerHR, and conducting testing. Researchers also assisted by testing the new integration and functionality. Finally, Library and ISTS collaborated with Research and Innovation Services, grant developers, and researchers to implement the system in anticipation of ORCiD being integrated into the Australian Research Council's Research Management System from 2018.

Discussion: ISTS and Library staff formed a united approach to ensure a rapid and successful ORCiD implementation, inviting expertise from other internal stakeholders as required.

36 - Altmetrics: capturing the influence of Australian research and celebrating achievements

Mrs Stephanie Guichard

Digital Science

Introduction: Altmetrics are metrics and qualitative data, complementary to citations and traditional bibliometrics. They measure the online attention to scholarly content mentioned in traditionally non-

academic platforms such as news, social media and policy documents. Altmetrics illustrate how often scholarly outputs like articles, books and datasets are discussed in various platforms and can be used to mark achievements, celebrate collaborations and showcase institutional networks. For that reason, altmetrics have been incorporated into researchers' websites, institutional repositories, media communication channels, journal websites, and other sites.

This presentation will explore altmetrics data for Australian research published in 2017 in the top 5 journals. We will discuss the rate of online engagement, the most popular platforms for sharing Australian research, and where in the world Australian research is most mentioned in news, public policy, Facebook and Twitter and how these outcomes should be celebrated and showcased.

Methods: Extracted data from Dimensions, a linked research insights tool, 4,214 publications published in 2017 by authors from Australian institutions in the country's five most popular journals (Scientific Reports; PLoS One; Heart, Lung & Circulation; RSC Advances; and bioRxiv). The article identifiers were imported into the Altmetric Explorer database, a leading resource for finding and analyzing altmetrics data.

Results: Overall, 2,452 (58.1%) of articles have attention in sources that Altmetric tracks. The articles gathered 55,387 mentions overall.

In terms of demographics engaging with Australian research, results indicated the following: 49,505 tweets from 167 countries; 1,771 Facebook posts; 2,935 news stories by 664 unique news outlets; and 30 policy documents across 5 countries. The presentation will include detailed maps showcasing global engagement with Australian research.

Conclusions: Overall, Australian-authored research from 2017 demonstrated great international influence across a variety of stakeholder groups.

Altmetrics offer a unique view onto the engagement with domestic research and should be considered as part of any organization's larger reporting and evaluation plans.

42 - Learn by Doing – Building a Design Think culture in 10 weeks or less…

Ms Donna Mcrostie

University of Melbourne

In a year of transformation change for Scholarly Services at the University of Melbourne the importance of hearing and responding to the customer experiences has becoming increasingly vital. We have embarked on a bold journey to reimaging our services and strategy from the community insights and experiences. This human centred design (HCD) approach to business decisions does however require new skills and capabilities for staff and ways of working to be embedded across our business.

 This presentation will outline our partnership with Design Think experts to develop an approach over a 10 week period "in-project" or "learn by doing" taking our leadership team, strategy group and managers through training and engagement to embed HCD tools, methods and ways of working for the future and drive momentum and energy around the work with the wider team and key stakeholders. Over a ten week period staff have participated in team coaching on applying HCD skills and new ways of working. This has been scaled over a number of experiences beginning with a three-day event (boot camp) which immersed staff in an intensive deep-dive human-centred design process which focused on a strict 'learn-by-doing' approach, where action is the emphasis and practical exercises develop energized and confident new design practitioners. This was followed over a six week period of deep-dives into HCD led by a team of expert practitioners and education specialists. Immersed in a creative and dynamic learning environment, covering:

building an effective design brief; Research methods and practice; Ideation; Prototyping methods; Pitching and storytelling; Team building, bonding and rituals

Through this program staff were provided with the opportunity to use existing projects or real challenges to apply the theory of HCD in real-world scenarios – ensuring all participants feel ready to exercise their new skills as fluently as possible. From this intensive we have developed a "at scale" design think capability and have translated to roles and responsibilities and approached moving forward.

Future Ready and the New Reality

94 - <u>The Social Analytics Lab - the impact of access to sensitive administrative data for research</u>

Ms. Heidi Perrett

Griffith University

The Social Analytics Lab (SAL) is a custom-built, secure research facility housed at Griffith University to store, manage and analyse sensitive administrative data for research and teaching purposes. As one of only three research facilities internationally, and the only one of it's kind in Australia, it presents unique research opportunities for complex real world social problems.

The facility houses administrative data; data originally collected for transaction management and record keeping but when collated and analysed, has the potential to provide the community with findings to help inform social reform.

To achieve accurate and meaningful insights into how our society currently operates and inform our future direction, researchers (not data owners) are able to interrogate these datasets. Due to the nature of the data, these datasets are protected by industry standard security protocols and remain the property of the data providers.

Access to these datasets is tightly controlled, however, access is available to approved researchers from any national or international academic institution - provided they go through induction. The processes involved facilitate the key purpose of SAL, establishing trust. Trust between the data owners and data interrogators is essential.

Since its launch in June 2017, the facility has had over 40 researchers inducted, over 10 projects have kicked off and over 5 publications have been released. The facility has also attracted additional datasets since it's launch and has the potential to take on more.

The establishment and success of the SAL has demonstrated that it is possible to gain and retain trust between the curators of sensitive data and those that wish to learn from it. However, as access to the facility is only through being physically on site, some of the potential of the data may not ever be fully realised. The next step in this transformation is to establish trust in a online environment.

This presentation will discuss the background and learnings from managing the SAL as well as introducing some ideas about the next steps we can take to achieve the same level of trust in a online environment that we implicitly have in a physical one.

V6 - Session information pending

105 - <u>Presence and supervision of distance internship using digital: Practices of Supervisors of Teacher Education Programs</u>

Mr Matthieu Petit

Université De Sherbrooke

In teacher education programs, internships provide opportunities for students to return to their home region or explore other realities through international internships. For institutions (academics or others), the

accompaniment of its trainees by supervisors represents a significant cost (Grable, Hunt and Unrue, 2008). The long distances to be covered by supervisors are time-consuming and they hinder the quality of trainees' support (Nault and Nault, 2001).

The supervision of the trainees is of great importance during the alternation between the training institution and the practice environment (Ferrier-Kerr, 2009). As digital technology allows for increasingly rich online support (Conn, Roberts and Powell, 2009), internship supervision can be done remotely (or in a hybrid way). To avoid the isolation of supervised trainees using digital technology, supervisors need to consider the feeling of presence in their cohorts of trainees (Garrison, Anderson and Archer, 2000). Paradoxically, distance can get learners closer (Caraguel, 2012) since it becomes unavoidable to create presence at a distance (Jézégou, 2010).

We know little about the practices of supervisors in this context that is needed in a growing number of institutions of higher education (Petit, Dionne and Brouillette, 2017) hence the question: when the supervision of internship is done at a distance using digital technology, how do supervisors adjust their practices (or even their role) to create presence within their cohort of trainees?

This research concerns the traditional model of the triad (Boutet and Rousseau, 2002) for the internship accompaniment using a more collaborative than normative approach (Wallace, 1991), but it is mainly the theoretical model of the community of inquiry from Garrison, Anderson and Archer (2000) who guide our analysis of the concept of presence. In this communication, we will share the results of the analysis of semi-directed interviews conducted with supervisors of French-language Canadian university-based teacher education programs, who rely on distance training supervision. It reveals a portrait of innovative practices that supports the pedagogical scope of digital training supervision (especially in a hybrid format), but also puts forward issues (organizational, technological, ethical ...) as to the success of this type of online support.

Future Ready and the New Reality

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53 - Digital Transformations require and Analog solution…People

Ms Kerrie Campbell

Flinders University

Most organisations in the world are talking about the digital transformations that are occurring in their organisations, this is desperately needed to keep pace with the world, but a recent Gartner paper found that 83% of organisations report that their digital initiatives have failed to reach scale or deliver benefits.

At Flinders University we believe that's because there is a secret solution to the digital problem and the solution is an analog solution one......People !

People are at the heart of any initiative and for these initiative to be successful we need to change the way we work, the way we think and the way in which we collaborate.

Flinders University has changed the way that people work and the way in which projects are delivered, we have put the customers truly at the centre of our IT universe by changing our business model from a classic IT structure to a customer centric model. Our governance structures have changed to be completely business led IT.

This is the new way IT is working in the world, this change has to happen to make IT more relevant to the University's business and Flinders is leading the charge with these changes.

Flinders University has changed it's governance models, business models, finance models and the frameworks for project initiation and delivery.

The digital transformation is a business problem NOT just an IT problem and Flinders University is responding in a way that is providing some really interesting results.

This talk will take you on the journey Flinders University has been on in the Agile transformation through to the business led IT transformation, we will discuss the lessons we have learnt on the way and some of the experiments that we are conducting to continue on the transformational path within the University.

The discussion will show a new IT model that has been implemented at Flinders, a new governance model, a new way of working without the use of a traditional PMO and the artefacts that have been developed on this journey.

66 - Unleash the Resiliator

Ms Karen Ferris

In a world where the speed and volatility of change is increasing, we need to stop talking about managing resistance to change and start talking about building resilience to change.

The World Health Organization describes stress as the "global health epidemic of the 21st century."

It is time to unleash The Resiliator!

This presentation explores the landscape of volatile, uncertain, complex and ambiguous change. It presents the costs of employee disengagement, stress and burnout.

It describes how leaders and their teams can adapt and be resilient in the face of constant change.

When people are resilient, change is smoother and easier to communicate. People are happier to make a change of course because they never feel as if it will result in a loss of control.

Resilient people are more confident to lead, take charge, self-manage and to inspire others.

A resilient workforce will motivate, innovate, create and experiment. It is an environment of collaboration and cooperation. All of these are capabilities that organisations need today if they are not only going to survive but actually thrive in the face of increasing change, disruption and competition.

This presentation explains the roles that individuals and teams need to embrace in order to be resilient. It will introduce you to The Observer, The Realistic Optimist, The Regulator, The Reframer and others. United they are The Resiliator!

79 - Electronic Assessment in One Year at Monash

Mr Cliff Ashford

Monash University

In late 2017 Monash undertook to implement an enterprise electronic assessment function. Throughout 2018 the program grew from inception to delivering over 10,000 sittings, with a roadmap to raise this by an order of magnitude by the end of 2019.

In this session we will cover the justification and implementation of a holistic assessment solution from each of the primary perspectives; student experience, academic assessment creation and marking, exam management, real-time analytics, and enhanced pedagogical outcomes.

In addition, we will deliver a live assessment for audience participation; demonstrating each of the key interfaces and functions, including live analysis of the results.

This has been a huge undertaking for Monash, with new issues and opportunities presenting themselves on a near-daily basis. Electronic assessment is as much about new business processes and breaking taboos as it is about highly reliable software and hardware.

The Agile approach, strong executive backing, and a tripartite governance model of Exam Services, eSolutions, and Monash Education Innovation have delivered a system that has been lauded by students and academic alike.

The transition from paper to a highly flexible digital environment opens up a huge range of possibilities to improve the authenticity of the assessment process. Students can now be assessed using the same tools they use during their education and would expect to be using in industry. Case studies can be presented using a variety of multimedia rather than simple text and diagrams. Responses can be made in a variety of new ways that were not previously possible.

Underpinning all of this is the capture of detailed analytics which can help not only during the exam to ensure any issues are identified early, but can also explain the success of different testing techniques on various cohorts of students and ensure marking is demonstrably unbiased and consistent.

Finally, of course, the process of creating the exam, quality assurance, marking, and delivering results back to students is hugely more efficient which results in significant cost savings for a large institution.

The Smart Campus – Digital transformation and innovation

Intelligent Automation Supporting Universities

Ms Karen Astley

Appian

In the age of digital disruption, intelligent automation is shaking up how business gets done. Organisations that do the best job of combining artificial intelligence with automation will come out on top. So what is Intelligent Automation? And how can universities benefit from it. We will discuss some use cases and ways that universities have deployed Intelligent Automation and the relevant benefits.

47 - "Build it and they will come" - facilitating digital dexterity and employability across cohorts

Ms Karen Kealy, Ms   Andrea Philips, Ms Deborah Jones

University of Melbourne

The incorporation of a Scholarly Services-led "Digital Learning Commons" as part of an ambitious University student precinct redevelopment offered an exciting opportunity to reimagine the support, space and services for the next generation of scholars. The vision is to seamlessly integrate and expand the traditional library space footprint into a vibrant contemporary and technology rich space with improved learning, innovation and study space for students. This presentation will outline our research-informed approach for defining and co-designing an environment and integrated service model that inspires the next generation learner, maximises the equity of access to services and tools to develop digital ready and savvy graduates and is flexible and adaptable to technology changes.

The Digital Learning Commons space will provide the critical infrastructure and support for students to develop digital literacy skills that they need to participate in a digital economy and become skilled consumers of information. The spaces and services within it are the result of close collaboration between Scholarly Services and a range of partners in the University and are aligned with the University's Scholarly and Digital Literacy Framework. The voice of the student has been central to the design and service model. The space will be a destination or "central hub" for students across the campus providing exposure and instruction in the application of a suite of technologies. Students will be able to collaborate, connect and create content with support from "digital ambassadors", bringing together deep expertise and cutting-edge technology to support learning and innovation. Experiences and space will be active not passive, and tools and technology will be part of the fabric of design, maximising flexibility and allowing agility to responding the changing needs of the cohorts and technological changes. The facilities and services will be distinguished by ease of use, equity of access and quality of content incorporating the latest technological developments to meet the changing needs of the student cohort.

43 - Griffith University's place-based data lab

Dr. Tom Verhelst, Ms Linda O'Brien, Mr Malcolm Wolski
Griffith University

THE REGIONAL INNOVATION DATA LAB

Data is being collected at an increased pace with 90 percent of all current data created within the last 2 years. New technologies in the IoT space are capable of creating an enormous amount of machine generated data. All this data holds a promise of a better world, where through the use of machine learning and artificial intelligence, insights can be created for the betterment of humankind. However most of this data is housed in data islands that are disconnected. There are great analytics tools for structured tabular data but analytics tools for exploring non-tabular data, such as messaging data, pictures, videos and a whole series of industry specific data are still nascent. The challenges of data volume, variety, velocity and veracity risks are drowning us in data while we are starving for insight.

The goal of the Regional Innovation Data Lab (RIDL) is to improve the capabilities and performance of localities by using place-based data and contribute to the cultural mind-shift to use of data in decision-making processes towards community capacity building. RIDL's role is to create platform tools that allow for this change to happen and facilitate collecting data to drive these platform technologies. RIDL is a self-funded unit at Griffith University Logan Campus, a campus that blends Griffith's research, teaching and engagement strengths into meaningful impact and influence within a specific community as a true example of a Civic University. Through engagement with government, business and the broader community, we put our academic knowledge, creativity and expertise to work, to develop innovations and solutions that make a positive difference within our community.

RIDL is created to facilitate insight through data for policy makers, researchers, NGO's and individuals and to inspire the next generation of data entrepreneurs. It provides easy access to a series of trusted data sources.

We use multiple linked data sources to help policy makers make informed decisions and ideally prevent problems in our cities and regions before they happen.

USE CASES

Logan Together is a 10-year community movement that is changing the lives of kids and families in Logan for the better. RIDL provides place-based data that provides additional insight into the challenges within Logan and tracks the systemic change within the Logan Community. By using holistic place-based data sets we can identify and quantify secondary and tertiary effects of the Logan Together initiatives.

In collaboration with Griffith's Policy Innovation Hub and our academic groups we use the lessons learned from Logan Together and the comprehensive data sets we have collected to provide insight into other communities around Australia. By leveraging multi parameters data sets that range from social service data, health data, financial data to education data (not an exhaustive list) we provide insight into communities and help regional cities and community organizations direct their energy and efforts more effectively.

Through the Policy Innovation Hub, we are working together with local, state and federal government agencies to enable evidence-based policy making. Our place-based data sets can track changes in socio-economic parameters that are affected by new policies. Together with our researchers and data scientists we apply algorithms to simulate and predict policy outcomes and provide local, state and federal policy makers with insights into optimal policy implementation.

> **In Unity is Strength**

102 - <u>What at scale transition to block mode has done for digital literacy</u>

Miss Miriam Bennett, Sam Rickard

Victoria University

In Feb 2018, after just 9 months preparation, Victoria University moved every first year unit to block mode: no lectures or exams, just 4500 students in small classes completing one unit at a time over 4 weeks. It's an example of what can be achieved when everyone, academics, senior leadership, central services, timetabling and student services, works towards an institutional goal.

The press has reported the impact of the block mode in terms of increased student retention and pass rates, but a lot more has been happening.

Whilst with the block mode, the focus has moved squarely to face-to-face teaching and active learning, staff digital literacy, and technological pedagogical content knowledge (TPCK) has increased. Despite huge institutional change in 2018, LMS help desk queries have decreased for both students and staff by 25% and staff are reporting confidence in their TPCK.

In this paper we scrutinize available datasets including the 2018 JISC digital online tracker, ITS and Learning Environments helpdesk queries and first year survey responses to measure the change in staff digital literacy and TPCK during the first year of the block mode.

We examine the data against the changes to support and teaching procedures which the move to block mode precipitated. These include: radical compulsory unit redesign involving a team of academics, learning designers, students, faculty leadership, librarians and student support; rapid iteration of units (up to 10 blocks per year); automation of LMS related administrative tasks (site creation, content copy and grades return from LMS to SMS) and a switch from LMS training sessions to 100% one-on-one, just-in-time on site and on line support.

None of the above processes or indeed the increase in digital literacy observed, would have been possible without the overarching institutional goal to work toward: transition all first year units to block mode.

98 - Service Co-Development in the Higher Education Sector

Mr David Wilde

AARNet

AARNet was created by the sector, for the sector, to provide shared network infrastructure and services. Founded in 1989 to connect Australian research and higher education to the internet - brand new at that time - our mission remains the same: to address market failure in serving this sector high quality, ultra-high bandwidth network connectivity and related services.

We work with our members and customers to develop unique solutions, very much favouring a co-identification, co-creation, co-development approach. This approach has borne fruit over many years:

• Eduroam: automatic connectivity to wireless networks at universities and other locations worldwide via federated authentication. Developed through an ongoing global collaboration of national research and education networks (NREN).

• FileSender – collaborative software for transferring large files; an open-source software project run primarily by NRENs for researchers at higher education institutions.

• CloudStor – the AARNet service for research data storage and sharing, developed in partnership with CERN

• Panopto – a partnership with a commercial partner delivering a lecture capture and streaming service; hosted on AARNet-owned shared infrastructure following consultation with several institutions.

• Data Retention storage – a shared service for institutions to meet their legislative obligations, developed in collaboration with CAUDIT to identify member interest, detailed requirements and demand.

We plan to continue and expand this collaborative approach. This talk will share some of the lessons we've distilled from our years of experience, and socialise our future plans.

In particular, AARNet recognise that whilst high quality network connectivity continues to be a necessary foundation for global research collaboration, it is no longer sufficient alone. One of our strategic initiatives is to increase our support of research data and workflows, through the facilitation and integration of the various components of this ecosystem: institutional compute and storage resources, sector-run research cloud services and high-performance compute, commercial cloud services and our own services. This can only be achieved through close partnership and collaboration.

Enabling Data Driven Transformation and Innovation in Education

Rohan Saldanha

In Unity is Strength

48 - Stronger together: shared approaches to e-resource & repository usage reporting for academic libraries

Ms Louise Dick[1], Ms Jo Lambert[2]

[1]CAVAL, [2]Jisc

E-resources are central to today's academic library collections and account for a significant proportion of library spend. In order to demonstrate value and impact, to maximise investment and shape collections, it is important to have meaningful usage data for library resources. However, obtaining figures that are reliable, consistent and comparable across publishers and platforms can be a challenge.

In response to common difficulties expressed by its member libraries in harvesting and reporting usage of multiple electronic resources, CAVAL (an academic library consortium in Australia) approached and subsequently partnered with Jisc (providers of digital solutions for UK education and research) to introduce the Journal Usage Statistics Portal (JUSP) service to Australia and New Zealand. This presentation will describe the JUSP project, the subsequent pilot of Jisc's Institutional Repository Usage Service (IRUS), and the possibilities for further international collaboration, demonstrating that united needs and collaborative approaches lead to stronger solutions.

JUSP is a standards-based service from Jisc, supported by a growing list of participating publishers, that collects, checks and presents individual libraries with a dashboard of reports on their eresource usage. An initial, five institution JUSP pilot in ANZ, swiftly tipped over to a live service, with JUSP currently being used by 22 university libraries in Australia and New Zealand, with local support from CAVAL. Trusted, comparable data also underpins sector-wide reporting. In 2017 the inclusion of new data elements on ebook and ejournal usage in the CAUL (Council of Australian University Librarians) annual library statistics collection was in part influenced by the uptake of JUSP within the community.

The Jisc-CAVAL collaboration has now extended to a 2018 ANZ pilot of Jisc's IRUS service, running in tandem with a USA pilot, addressing similar challenges around consistency and comparability of usage data for institutional repositories, with the potential to support local, national and international reporting.

Both JUSP and IRUS are user-driven services from Jisc, developed in response to academic library requirements. Meeting the united-needs of a growing international community of users, whilst partnering with member-driven organisations like CAVAL, can only help such services grow stronger.

49 - Improving Research Support - how the IRIS Program at The University of Auckland enhanced the Research Support ecosystem

Mr Stephen Whiteside

The University of Auckland

The University of Auckland's research support ecosystem was disjoint, with systems across two different organisations and varying practices per faculty. The complexities of our research support system meant that the university had a high cost research support function, with low levels of research satisfaction. The Improving Research Support (IRiS) program boldly standardised researcher support roles across the

University and UniServices, it's commercially focussed subsidiary. As a consequence, research support has now been simplified, with staff placed closer to principal investigators and faculty teams applying for funding and conducting research. Standard research support processes have been consolidated into a Research Operations Centre, complementing the direct support resources in faculties.

Along with standardising roles and processes, the University also developed a map of its research support ecosystem. This allowed the University to think of researcher support requirements from a customer perspective, rather than the traditional view of departments taking a narrow view of their own systems. As part of this process, the University used business intelligence as a glue to bind its systems together, and decommissioned its historical Research Management System.

We often think of digital transformation in the context of new and disruptive technologies. In this case, transformation has occurred through taking an end to end customer perspective in order to significantly enhance support for the research lifecycle. The University now operates without a Research Office and without a traditional research management system, but has significantly improved the focus of IT systems and researcher support.

This presentation will outline the process of transformation, through development of a new service delivery model, through to developing a new research ecosystem to support the standardised processes, and enhancing reporting through a focus on business intelligence. These changes could not have been achieved without strong sponsorship, a focus on program and change management, and an integrated IT program supporting the University's research support vision.

59 - Engaging staff with program redesign and blended learning in two large scale institutional projects

Ms Rosemary Borland, Dr Sonia Wilkie, Ms Tania McDonald

Victoria University

In Australia, many universities have taken on initiatives to implement blended learning in recent years and many have grappled with how to engage staff in the process. The impact in terms of building the capability of staff to engage with the active learning approaches which blended learning can facilitate has often been disappointing.

Anonymous University has embarked on two such projects, both focused on embedding blended learning and blended learning approaches into program delivery across the institution. This paper compares the strategies and processes that have been used in these projects to support the design and development of blended learning units and to engender staff motivation to engage with the process and develop their capability in each case. We focus on the outcomes in terms of moving the university towards a mainstream adoption of blended learning methodologies.

> **Student Centric Lifecycle & Experience**

23 - Tipping towards success: using technology to engage and ensure enhanced student experiences

Mr Richard German, Mrs Thelma Fisher, Mrs Trish Leishman, Ms Christy Ballard

University of Otago

Ensuring a seamless online student experience that engenders repeat engagement drives the innovative development and reframing of ResearchSmart modules for health science students at the University of Otago, Dunedin, New Zealand.

Background: ResearchSmart is a modular, self-directed, self-paced, interactive online course originally designed by Health Sciences Library subject librarians for second year medical students, and developed to assist students attain the University's Graduate Attributes for Information Literacy. Piloted in 2012, it has now replaced in-class information skills tutorials in professional courses in the Schools of Medicine, Dentistry, Physiotherapy, Pharmacy and Biomedical Sciences, either as an assessed or required component.

Methods: The modular content comprises a series of topics, tasks and quizzes built in Adobe Captivate and delivered within the Learning Management System (Moodle or Blackboard). By 2018 it has evolved to meet changes in technology standards, platforms, devices, software, and academic convenors' and students' digital expectations and needs.

Findings: Proactive planning, reflection on academic and student needs and feedback, and attention to managing software interoperability, e.g. with Captivate, LibWizard, Sli.do, HTML5, and SCORM, have formed the basis for progressive development of the ResearchSmart modules. Increasing from four to six modules (by adding reference management and e-professionalism) has kept pace with degree redesign, learning objectives and the expectations of professional workplace standards. Student engagement has expanded to include postgraduate courses, more non-professional disciplines and new degrees; reaching over 2500 students annually. Reframing the use of these modules for residential workshops, pre-course readiness, distance-taught courses and as refresher hub resources has been undertaken by incorporating the best use of technology to enhance student skills, knowledge and experience.

Discussion: How ResearchSmart can adapt and remain future-ready will require collaboration, training and a willingness to be responsive yet innovative between academic staff, students, librarians and IT staff.

4 - Online Interactive Activities To Avoid Death By Powerpoint

Mr Ghaith Zakaria, Dr Sonia Wilkie

Victoria University

The traditional mode of delivering content to students via face-to-face lectures is one that has been extensively employed at many universities. However, staff at Victoria University raised concerns that this teaching method was no longer suiting the cohort of students. Attendance to the lectures declined over time, whilst attendance to tutorials and practical classes remained consistently high. These observations align with studies (Freeman et al., 2014) which suggest that the lecture delivery method is ineffective, does not engage students in their learning, and results in poorer student outcomes than active learning experiences.

With these factors in mind, it was decided to transform the curriculum with a design focusing on greater flexibility for teaching and learning, whilst enabling students to learn at their own Pace, Place, and Mode. A blended learning model was adopted and the lecture delivery format was replaced with active learning workshops. One method that was used to deliver the theoretical and technical content previously delivered by the lectures, was the use of Online Interactive Activities with the H5P Toolkit. These activities provided engaging active learning experiences, which could be used as pre-class or in-class activities. Examples of the variety of activities that were developed for use as active learning experiences include Interactive multimedia with Guest Speakers, Case study scenarios, interactive technical demonstrations, 360° virtual lab tours (both videos and still images, that include hotspots, roll-over information, animated .gifs, quizzes), Interactive Diagrams with clickable hotspots and drag & drop activities; templated note-taking study guides; and check your knowledge quizzes.

Student access to the online learning space, activities, time spent on the space, their progress and results were all measured, in addition to gaining student feedback of their opinion of the online interactive activities. These results were compared with the previous mode of delivery (purely face-to-face lecturing with support material provided online). Analysis of the results indicate that student pass rate and retention increased, with positive feedback from both staff and students.

Examples of the activities as well as the qualitative and quantitative analyses on student and academic impact will be presented at the conference.

V7 - Session information pending

Experiential Learning

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57 - Deakin FreelancingHUB > delighting students and clients, the nexus between academia and professional services

Mr Toby Durden

Deakin University

The presentation introduces the Deakin FreelancingHUB concept, the importance and relevance of experiential learning and how professional services can support and contribute to the student experience, prepare emerging graduates for the workplace and contribute to the University's good standing in the communities it serves.

Over the last 18 months Deakin's Graduate Employment Division has developed the Deakin FreelancingHUB as a mechanism for aspiring students to get real-world project management experience whilst studying. Participation in the Deakin FreelancingHUB allows selected students to earn academic credit whilst working directly with an external client (suitably attired and conducting themselves in a professional manner) and being mentored by an industry professional.

Specifically the Deakin FreelancingHUB model re-enforces the theory of Project Management, how it is applied in a collaborative, multi-disciplinary team and for a real client.

The model ensures a relevant, contemporary, and authentic learning experience through engaging industry experts to guide and mentor teams of students to deliver a pragmatic and creative solution to a real-world problem or opportunity.

91 - (Bio)Fabricating a shared language of pedagogical design to co-construct a postgraduate online course

Ms Bethany Muscat, Ms Sabine Straver, Dr Janine Delahunty

University of Wollongong

Background: As universities increasingly offer online learning options, some of the less transferable pedagogical practices common in face-to-face teaching are brought into view. This can give rise to tensions between academics and educational designers in regard to re-thinking content, teaching practices and pedagogical design. In 2017 Biofabrication was one of a number of University of Wollongong postgraduate certificate courses earmarked for the first offering of fully online courses marketed under 'UOW Online'. Biofabrication is a highly specialised, postgraduate course taught in disparate, face-to-face intensives. This paper reflects upon the shared conversation between eight Biofabrication scientists ('scientists'), with backgrounds in chemistry, biology and/or engineering, and two Technology-Enhanced Learning Specialists ('designers') responsible for transitioning the course to fully online. At the outset it was decided that the siloed topic-based approach would be exchanged for experiential, clinical application-based approach to meaningfully frame the content in real-world contexts.

Methods:The study draws on the concept of Cognitive Activity-Based Design methodology (Kim & Lee, 2016) to retrospectively analyse the records and reflections kept by the designers in order to move from 'ill-defined design problem' to 'satisficing design solution'. Data included self-reports; writings, sketches, computer iterations; observation notes/reflections. These were categorised according to the design phases of problem structuring, preliminary design, design refinement and detailed design with the kinds of activities this involved such as thinking, examining, writing, sketching computer work.

Findings: Through the co-construction of an authentic, shared language, evolving from an adaptable low-level 'course design overview', the designers and scientists developed a common language amidst their polar realms of expertise. This gave all a voice to discuss course content and pedagogical design. In practice, the course design overview became the design model.

Discussion: By avoiding a static, one-size-fits-all design model, the wider field and professional practices of Biofabrication informed the design. Through making time to establish collegial relationships and refine the tangible yet flexible course design overview, the designers and scientists were able to effectively design the course using a shared language. This also ensured experiential, real-world learning opportunities for learners. Both parties finished the project with cross-fertilisation of knowledge stemming from the wider context of mutual respect.

38 - Pushing technology over the learning design threshold

Ms Megan Saville, **Mr Peter Smith**

University of NSW

Background: In higher education, technology is often touted as a key tool in the repository of good learning design. It is true that technology is the most effective way to scale authentic and adaptive individualised learning experiences. However it's easy to forget that technology is not the driver. Good learning design is and always should be at the helm and, technology needs to be pushed by the power of pedagogy.

Methods: As a case study, UNSW Library redeveloped the ELISE Quiz online induction module using adaptive learning technologies, overcoming unique challenges faced in designing a truly adaptive and authentic learning experience for 10,000+ students.

Starting from the hypothesis that each student begins their university experience with differing levels of knowledge and understanding of higher education, the design process began by redefining learning outcomes. From these, the learning framework was created - a pre-quiz (baseline for prior knowledge), learning modules with interactive learning activities and real-time student feedback, and the actual quiz, determining student scores. When a student answered a question/s incorrectly, the technology would direct them adaptively through learning modules personalised to their learning needs. Further, the design framework required students to be looped back through relevant lessons for revision if unsuccessful in passing the actual quiz.

Findings: In the initial stages of the project, it was realised that the technology was unable to achieve the level of adaptability required. Instead of changing the learning design, a staged approach was needed to push the technology. The learning design framework was broken down into a set of deliverables, and the technological functionality was developed in targeted stages, in line with student feedback. Three iterations later, the project has become business as usual.

Discussion: This case study highlights the success of a learning design driven model of development. Positive voluntary student feedback and insights from learning analytics provide continual evidence of the soundness of this approach and demonstrate the value of keeping the student learning experience at the forefront and pushing the technology.

The Smart Campus – Digital transformation and innovation

69 - Predicting Students Success with Leganto, a proof of concept machine learning project

Mr Peter Green[1], Mr Gal Darom[2], Mr Tomar Katz[2], Mr David Lewis[1]
[1]*Curtin University, [2]Ex Libris*

Predicting Students Success with Leganto, a proof of concept machine learning project.

Curtin Library successfully implemented the Ex Libris Leganto software in 2016 to provide an integrated, client facing Reading List solution. The implementation of Leganto was well received by instructors and has become the common way in which students discover and access their Reading Lists at Curtin University.

Ex Libris approached Curtin Library in 2017 with a proposal for a proof of concept project which would investigate the correlation between student success and activity within the Leganto Reading List. It is hoped that this will enable early identification of students who are likely to struggle and will provide an opportunity for early intervention with strategies to mitigate the risk of failing. Using learning analytics to predict student success and to identify students at risk of failing to complete their studies has been an ongoing area of interest to Curtin University and this offer from Ex Libris to partner in a proof of concept project was accepted.

To identify student activities that might be associated with learning success Ex Libris would analyse Leganto usage data combined with extra data provided by Curtin Library to identify characteristics of the courses,

student course results and basic student profile information. Providing this extra data was an essential part of the project and one that required a clear understanding between Curtin Library and Ex Libris about the way in which the data would be handled to ensure that student privacy would be ensured.

During 2018 Ex Libris applied data mining and machine learning algorithms to discover insights in the data, building prediction models to assist in identifying students who are more likely to struggle. Early outcomes indicate that predictive models could be developed. With further development these models might then be applied in real time, allowing the institution to focus its retention efforts on students who fall in the high risk category.

Following the successful proof of concept project this functionality might be integrated with Leganto or added as a service offered to Leganto customers.

Develop a multi-cloud strategy to drive efficiencies and accelerate innovation
Nutanix

Educational institutions are increasingly facing new challenges with traditional IT infrastructure. From online testing, BYOD adoption, increased school data access by faculty and students, and the surge in learning applications and instructional video — IT infrastructure needs to be more adaptable than ever while facing tighter budgets and aligning to standards.

Nutanix enables IT teams to build and operate powerful multi-cloud architectures. Our Enterprise Cloud OS software melds private, public and distributed cloud operating environments and provides a single point of control to manage IT infrastructure and applications at any scale. Our customers achieve up to 60% reduction in IT costs whilst simplifying and accelerating the delivery of their key applications. Nutanix empowers IT departments to focus on strategic initiatives and placing students, academics and professional staff at the centre of what they do.

Next generation Wi-Fi trend and Wi-Fi6 for education industry
DR Osama Aboul-Magd
Huawei

Future Ready and the New Reality

25 - Tipping Point? We passed the edge five minutes ago! A report from the front lines of implementing a large scale, high engagement model of online teaching and learning at CSU

Dr Lindy Croft-Piggin, **Mrs Michelle Wilkinson**, Mr Gerard Bourke
Charles Sturt University

For many busy academics with huge teaching and research workloads, being asked to 'innovate their teaching' can become the tipping point. We'll share what we've learnt about how to move teaching and learning innovation from the 'edge' of an academic's thinking to an important part of their practice, by exploring the importance of professional relationships between academics and educational designers in a project implementing a model of best practice in online learning.

In 2015 Charles Sturt University (CSU) set out to 'reimagine' what a distinctive CSU online teaching and learning offering would look like as part of a broader strategic renewal process across CSU. One of the key outcomes of this process was the development of an 'Online Learning Model' (OLM) which articulated best practice in online learning. Drawing on research and literature relating to distance and online education, the CSU Online Learning Model' has subsequently been implemented over three years in 120 subjects and it forms the basis for a large scale implementation across the university.

A mixed method evaluation of the project has found student engagement was increased and the student perception of quality correlated with the presence of the elements in the model. Both staff and students identified enhanced teacher presence and quality digital resources as key elements of the online teaching and learning experience. The evaluation of the OLM Project to date has identified the elements themselves as both useful and vital in informing a reimagined and enhanced online teaching and learning experience, as well as highlighting the need to consider broader factors such as resourcing, staff skill levels and familiarity with technologies and online teaching and learning pedagogies. Understanding how to acknowledge and address these constraints is a significant development in operationalising the OLM as a process for teaching and learning innovation. The need for personalised academic support, sensitive to individual skills, and pedagogical preferences highlights the complexity of a large scale quality improvement project in teaching and learning.

80 - The Australian Research Data Commons – Transformation, Innovation, Acceleration and Sustainability of the Australian eResearch System

Mr Ian Duncan

Australian Research Data Commons

Since 2004, the Australian Government has invested nearly $3.3 billion through the NCRIS program to deliver world-class research infrastructure. This has attracted more than $1 billion in co-investment from state and territory governments, universities, research facilities and industry. The NCRIS network supports national research capability through 24 active projects comprised of more than 200 institutions employing well over 1900 highly skilled technical experts, researchers and facility managers, providing services to over 40,000 domestic and international researchers.

The NCRIS developed 2016 National Research Infrastructure Roadmap brought together the NCRIS ANDS, Nectar and RDS projects into a single entity in June 2018 with the establishment of the Australian Research Data Commons (ARDC).

The ARDC strategy is evolving to set out the intent for the ARDC for the next 5 years. This plan is being developed with key partners and the community, building on the strengths of ANDS, Nectar and RDS, as a transformational investment, partnering to facilitate a coherent research environment that will enable Australia's researchers to find, access, contribute to and effectively use leading data-intensive eResearch infrastructure to maximise research quality and impact. Ensuring Australia's higher education students are empowered to discover, enable, and exploit these resources in both their studies and in developing research careers is key to our success.

This talk will outline the roadmap for the next 5 years and provides an opportunity for the community to engage with the ARDC on this journey and to identify opportunities partnership.

83 - Don't Let Perfection Get in the Way of Better

Ms Donna Gallagher, **Ms Terina Stokes**

Open Universities Australia

Outmoded technology infrastructure including a bespoke CRM system, highly customized catalogue management system and obsolete web platform restricted how quickly Open Universities Australia (OUA) could respond to changes in an increasingly competitive higher education landscape, and the needs of students to find the right academic program for them. By using a 360-degree view of the student as customer to drive requirements gathering and agile squad-driven decision-making during implementation, OUA began a period of transformation forecasted to take two years; it took eight months.

Whilst the most visible change was a fresh website, it is supported by more than 30 innovative back-end systems; business transformation wasn't limited to new technology. OUA also changed to an agile business culture, implementing a squad-driven structure enabled agile sprint planning, backlog prioritization and quick decision-making which was fundamental to our success.

A customer centric approach to initial project scoping revealed much more complexity than was envisaged but rather than wait to perfect the architecture, OUA launched much earlier than we were ready for. This was a bold decision but having on-site vendor teams with specific skills and subject matter experts on staff enabled the quick response to business-critical issues. OUA launched more than 200 system releases in less than three months.

OUA has implemented a cross-cloud solution in which more than 30 student journeys are now triggered by marketing activities. The benefits to the student and our university partners was immediate. Technology has reduced the number of human touch points from 5 to 2, with time spent down from half an hour to five minutes. An application process which took up to 40 days now takes 7 days. New student enrolments grew by 17%.

Every transformation has challenges and learnings. The key to success was defining a clear scope of work, prioritizing critical business scenarios and having one team united by a common goal. OUA didn't aim for perfection, we wanted to be better, and then continue to get better in future.

In Unity is Strength

82 - Research Data, Storage and Management - building unity with diversity across the technology, research, the Library and the sector to support the research life-cycle

Mr Jason Nairnsey, Mr Jason Andrade

University of Wollongong

This talk focuses on solving research data, storage and management challenges at the University of Wollongong. Strong engagement with the sector combined with solid internal collaboration across the divisions of IT, Research, Library and Legal services have been key in developing a cohesive set of solutions. Our approach has been to ensure that provisioning and managing research storage was not done in isolation and that the end to end research lifecycle needed to be key to any solution being proposed. For example the start of metadata collection for a research project is often captured in other University systems, such as a grant application. Guiding the flow of existing information through to a metadata management program saves a researcher entering the same data into multiple systems. Similarly at the publishing stage of a

research project this metadata can be re-used plus attached to a dataset and its licence if required. Having this centrally managed allows researchers to adhere to institutional policy with a minimum of overhead, a key to adoption.

UOW's chosen metadata application is open source and being used by several Australian Universities Built around a Research Data Management Plan (RDMP) it can provision storage, be attached to an ethics application, satisfy funders as well as provide a record for records management purposes (avoiding the need to store research data in the records management system itself). This web portal is being developed in collaboration across the sector and the future roadmap includes aligning deeper level, domain specific metadata and datasets from other commonly used software used in research projects.

Streamlining the administration of a research project has been key to the success of this program as it allows more time for a researcher to get on with their research. Additionally engaging research support stakeholders has transformed them into collaborators that have championed the ecosystem.

We cover the implementation of a variety of storage solutions to meet researcher requirements and the challenges of connecting them to a metadata management system as well examples of what has worked well and where the challenges have been.

90 - The ThinkSpace nexus: University Library building cross-disciplinary opportunities for student innovation and experiential learning

Mrs Kristna Gurney, Mr Matthew Davis

The University of Sydney

The University Library's ThinkSpace is the only space at the University of Sydney where students, researchers and staff can experiment with and learn about new technology in a peer supported environment. For free.

Our students enter ThinkSpace with a question – we help turn that question into a possibility and a real-world learning experience.

Through the ThinkSpace model the Library has been an influencer for other areas of the University, encouraging entrepreneurial innovation and future ready skills development through access to its technology, and the support necessary to innovate and creatively problem solve. Our staff of Peer Learning Advisors are an integral part, guiding and supporting clients through their experiences.

The success of the ThinkSpace model has underpinned the development of similar spaces in the University to support the changing needs of future-ready graduates.

ThinkSpace has been the platform for sparking ideas in faculties, addressing how they can future-ready their students through incorporating experiential learning into their teaching. By utilising the technology resources available, teaching staff have built creativity and engagement into assessment techniques (for example, video assessments and 3D modelling).

Researchers have experimented with ways of using our technology to demonstrate their research through protypes, taking these models to conferences and using them to inform their talks.

ThinkSpace supports and develops Communities of Practice. Opening the doors of ThinkSpace to community meetups, the Library has increased opportunities for our students and researchers to collaborate with industry experts, be inspired by start ups and create the vital networks needed to keep pace with industry.

Sharing the space creates a sense of community, belonging and a safe space to try new ideas and encourage the entrepreneurial creativity inside our students.

Other University services like the Innovation Hub and Sydney Data Analytics have realised ThinkSpace's potential to reach students across disciplines. Through these collaborative relationships students are getting access to the cross-disciplinary experiences they require to perform successfully in today's competitive industry environment.

The presentation will cover:

- Cross disciplinary collaborations
- Development of CoP
- Programs to support innovation
- Opportunities built through community & industry engagement
- Case Studies

97 - Technology Enhanced Learning Spaces: A framework for academic adoption

Dr Ratna Selvaratnam

Edith Cowan University

Universities have made significant investments in their learning spaces in recent years. In many cases new buildings have been designed with the view that students will be engaged in technology-rich, active and collaborative learning experiences. The purpose of re-designing the architecture around student learning has been to enable effective learning and teaching strategies to be incorporated in increasingly technology rich, and even spatially larger, learning spaces. Teaching spaces such as lecture theatres have traditionally been modelled on transmission forms of teaching. Within these spaces, teachers have endeavoured to incorporate active learning strategies. New generation learning spaces have increasingly replaced traditional teaching spaces and are usually enhanced with technologies that aim to support active learning and enrich the student experience.

This paper will attempt to begin to address the gap in higher education that exists in evaluating how effectively academics use innovative learning spaces to support learning outcomes. A large project rollout on technology enhanced learning spaces in an Australian university will be explored as a case study. The academic adoption campaign will be detailed. After the rollout, academics who were scheduled into the space were asked for their feedback in the middle of the semester. The high level data will be discussed. This paper also proposes an academic adoption framework that can be used across higher education setting to increase the effective use of technology in innovative learning spaces.

The framework can be a part of the induction for new staff and also professional development for ongoing staff. This information will also help universities effectively build new, and refurbish existing, learning spaces and help educators design innovative pedagogies. Student learning outcomes can be greatly enhanced if innovative learning environments can be used meaningfully through effective teaching strategies. The key to this is appropriate professional development for teachers within these spaces.

Student Centric Lifecycle & Experience

5 - <u>Leading a Student Centric SMS Implementation</u>

Ms Karen Davies

Western Sydney University

Background: A University's student management system is the key solution for managing the admission, enrolment and progression of a student through their academic journey. The implementation of the Ellucian Banner student management system is an exciting opportunity for Western Sydney University to design a comprehensive system that will support a streamlined solution for students and staff, improve the student experience and adopt a solution that will flip the way in which Western manages the student administration process.

Methods: Core to the vision of Western Sydney University is to secure success for our students and Greater Western Sydney region through innovation and discovery in a dynamic and technology-enabled world. The approach being adopted to implement our new student management system is through extensive stakeholder engagement, at the right time, to design and configure the solution to provide a single source of truth for all student administration processes.

Discussion: This is the largest strategic transformation project that Western has undertaken for a long time. The core principles of the program will be explored that highlight how Western has flipped our operational models to ensure a student centric approach is adopted.

At Western Sydney University the implementation of a new student management system epitomises the University's goals to offer a distinctly student-centred university, to provide administrative systems that are innovative, flexible and responsive to student needs.

The take home messages – students are the core of all higher education institutions and we need to be able to adapt our administrative processes to ensure we deliver student centric, streamlined administrative processes that provide a superior student experience.

18 - <u>Just-In-Time Learning: from Prototype to Product</u>

Ms Peta Humphreys, Dr Linda Stern

University of Melbourne

On-line resources can empower students in their quest to develop the library research skills essential for independent research. To this end, there has been an increase in on-line library information in the last few years. However, faced with a list of excellent resources, students do not always immediately know which ones to choose, and may need guidance. We have built a comprehensive interactive resource to fill this need; it gives students necessary guidance, at the same time that it saves valuable librarian time.

Just like a good lecture, this resource gives students the overall big picture, before going into details. The student can delve down into each topic as deeply as they wish. Material is presented in student-sized chunks, with a focus on interactivity and experiential learning. Along these lines, structured activities for each topic move students from theory to applying what they have learned to their own research.

A pilot study of this resource was presented at the THETA conference in 2015 (L Stern, P Humphreys, C Patterson, Just-In-Time learning for library research skills, THETA 2015). Since then, the resource has been rolled out to postgraduate students in the Melbourne School of Engineering at The University of Melbourne. During this roll out, we have collected both objective and subjective usage information. Analysis of web logs over several semesters has shown trends in the numbers of students using the resource. We have also obtained more detailed information, such as patterns of use throughout the academic year. Surveys every semester since the initial roll-out have provided quantitative and qualitative information as to the perceived usefulness of specific content areas and the appeal of various presentation methods. We are currently delving more deeply into student perceptions in focus groups. Triangulation of these three data sources is expected to give us a rounded picture of the student experience. In addition to the data on usage, we have been surprised to discover what a critical component marketing is in student uptake. We predict that libraries will increasingly go the route of on-line resources, and we wish to share our experiences.

21 - Digital Literacy: Essential to learning

Ms Linda Forbes

Victoria University Melbourne

Background: In 2017, Victoria University teaching staff, learning designers and Scholarly Information Services librarians collaborated to implement a major redesign of learning for all first-year courses. This redesign used the block model of learning where students study one four-week unit at a time. Our design discussions included a focus on the skills and attributes which students would develop as they went through their first year of university study and encompassed the key attribute of digital literacy. Furthermore the block model design facilitated a new set of additional learning opportunities for students. These 'Learning Essentials' (comparable to micro-credentials) are designed to take place in the library's Learning Hub and aim to complement unit and course outcomes.

Goals and methods: As part of this changed model of learning the library team seized the opportunity to create a new suite of Digital Literacy workshops for first year students. The JISC model of Digital Literacies informed our planning and each workshop posed the question "Digital Literacy - what does it mean to you?" We wanted students to be able to access and evaluate information from a range of digital sources and platforms and to be able to communicate effectively and collegially in a digital environment. Significantly, students would also need the ability to thrive and work ethically in digital environments, and to build the skills and knowledge to manage their own digital footprint.

Findings – outcomes: In workshops such as 'Digital Literacy for Building Science' students shared digital artefacts and investigated the reliability of building science sources. Business students explored ethical and responsible use of social media and its implications for business. We found that common digital literacy themes such as managing your digital footprint could be illuminated through discipline specific content, and that there are multiple ways to address these ideas through students identifying and discussing different elements of digital literacy.

Discussion: This presentation will discuss the impact of how new ways of designing learning can facilitate opportunities for students, teachers and library staff.

29 - Student-centric feedback through rapid analysis of written responses

Dr Catherine Gunn

University of Auckland

Automated text analysis tools are an innovation at the tipping point in the use of information technology in teaching and learning. Research and development that was the domain of specialists has begun to spread as demand for these tools extends to common teaching and learning activities, e.g. assessment of students written work and discussion contributions. As class sizes grow and diversify, higher education takes place online as much, and sometimes more than in physical spaces. Instructors are challenged to provide timely feedback on students' written work. Yet feedback closes a critical loop between teachers and learners in Laurillard's (1993) Conversational Framework. Automated feedback from multi-choice quizzes is one way to meet the challenges of scale, though it does not reveal depth of understanding or clarity of expression as students' free text, written answers do. Prior to the development of easy to use text analysis tools, instructors had few time efficient options to use this type of assessment with large groups.

One application of text analysis tools supports rapid evaluation of online discussion posts so feedback can be tailored to learner needs. The challenge of managing online discussions with large groups of students has never been fully resolved. The development of MOOCs (massive open online courses) raised this challenge to a new level, as thousands rather than hundreds of students enrol in courses where connectivist and constructivist learning models use discussion as a key method of learning. This presentation will describe the use of Quantext, a text analysis tool designed for teachers, to analyze discussions from a MOOC with an initial enrolment of around 19,000 (Donald et al. 2017). The presenter will explain how instructors can gain insights into student learning through a rapid analysis process that could support timely responses and targeted feedback in future iterations of the course.

31 - <u>Uni Apps: designed by students to support student success</u>

Miss Miriam Bennett, **Miss Kati Elizabeth**

Victoria University

The project: The aim was to engage current students i.e. employ, remunerate and apply advanced standing where appropriate, to lead the design and development of student apps.

Scout, a student engagement app, was the first of these projects, an experiment in student-led learning and teaching projects, an experiment resulting in great success. On the back of this success, the student team has now been engaged as part of a much larger University Student Digital Experience Project to design a 'super app', which pulls all the university student apps into one, strongly focussed on student centred design and UX.

The product: Scout, is an app developed to activate learning spaces both online and on campus and to encourage all the things that we know improve student engagement: making friends at university, attending class, spending time on campus and engaging in extra-curricular activities. Students designed the app to incentivise these activities using fundamental gaming principles like leader boards, prizes and rewards whilst drawing inspiration from popular apps like Snapchat and Pokemon Go. They also designed and built a world first social augmented reality app feature.

The results: The app is currently available to all students in both the iTunes app store and Google play and has upwards of 3000 active users. The product lead and co-author, a current honours student, has received credit for this work in the form of advanced standing for a 12 credit point unit in her Bachelor degree. The project aligns strongly with the University's move towards an entrepreneurial orientation within and across the curriculum as well as a flexible, tailored approach to student pathways and recognition.

Conclusion: The success of the student led app project has been very clear. We were able to deliver a real world learning and teaching project, led by students, on time and on budget. The app is different, it is not what would have been developed if we had hired HEW/Academic staff and only consulted with students. Now, with students leading the design and development of the 'super app', students are truly front and centre of their mobile experience at university.

40 - Viewing learning analytics and student experience feedback through a threshold concept lens

Ms Jennifer Whitfield, Ms Nadia Kempfe

University of NSW

UNSW Library obtains large amounts of quantitative completion data through a university-wide online induction quiz. But this data is not as useful as might be thought. Due to the large-scale size of the cohort undertaking the quiz, the platform analytics are high-level and only broadly define where students get stuck. To achieve a more granular understanding of the student experience, the Library applied a threshold concepts approach – a lens to provide insight into the "why" of "troublesome knowledge" (Blackmore, 2010). On completion of the induction quiz, students are invited to complete an anonymous feedback survey. A surprisingly large amount of qualitative feedback is returned. The team analyses this feedback using the UNSW Library threshold concepts: Academic Rules, Pattern Perception, Time/Outcome Ratio, Play & Exploration and Systemic Thinking. These were originally developed in 2010 and have continued to underpin innovations in service delivery. A peer-review process is used to match each piece of feedback to relevant concept/s. Through categorisation, patterns are identified around where students are struggling or engaging with fundamental understandings of the quiz content. This analysis is then combined with the high-level learning analytics to drive iterative change.

The combined analysis has given UNSW Library authentic and actionable insights into the student experience. Findings include students struggling with core concepts such as peer reviewed literature, academic writing and referencing and citations. In response, new interactive learning activities have been integrated into the learning content, areas have been streamlined and activities have been redesigned to improve understandability and usability. What is always kept in mind is the Time/Outcome Ratio.

The ongoing project has demonstrated the importance of viewing the student experience from different angles and data sources helping UNSW to ensure relevance and true adaptivity. Building on the actionable insights garnered from this combined approach, the team is now interested in drawing more qualitative data from the quiz itself via open-ended question design as technology develops.

Experiential Learning

108 - Turning Learning on its Head: A Review of the Flipped Classroom Strategy

Glenn Mason

Western Sydney University

Background: Western Sydney University is a major metropolitan university in Sydney with campuses that cover a wide geographic area. The university offers a range of undergraduate and postgraduate units that are administered by schools and higher degrees. At present, vertical campuses are on the rise due to the physical

affordances of the available spaces, such as seen in the flagship Peter Shergold building in Parramatta city. The focus of these buildings is to promote active, student-centred learning by providing a physical space that is more conducive to group work and project based learning than traditional lectures. Courses that run through these campuses have been required to undergo substantial curriculum and delivery changes. In 2017 these changes necessitated the adoption of a 'flipped' design to teaching and learning. The flipped model addresses constraints on space through its emphasis on the delivery of content knowledge using online delivery and teaching and learning that focuses on active learning in a classroom setting.

The objective of this research is to examine the impact of the adoption of the flipped model on student learning and teaching practice.

Methods: This is a mixed methods study and it will use data available from general institution-wide survey, data from surveys about flipped learning and interview data from focus groups. The aim will be to use this data to address the following questions:

1. How has student learning been impacted by the flipped environment?

2. How have teaching practices changed with the introduction of the flipped environment?

Expected outcomes: The flipped model has become increasingly popular in higher education contexts although the evidence to support its continued use is uneven (O'Flaherty & Phillips, 2015). This research will contribute to the body of literature on the efficacy of flipped classroom and to extend our understanding of how the flipped model can contribute to a student-centred model of teaching and learning. Preliminary findings provide evidence for its wider adoption at the university.

56 - Digital Dexterity - The New Frontier

Ms Renée Grant, **Ms Courtney Shalavin**

University of Wollongong

A digitally literate workforce is no longer a choice but an imperative in this current era as organisations seek to develop and enable innovators and shapers of the new digital reality. However, it is not enough to be just digitally literate. Digital dexterity is the new frontier, extending beyond digital literacy by providing individuals with the ability to leverage media, information and technology. In a higher education environment, a digitally dexterous workforce is vital to facilitate innovation in learning and teaching and to keep pace with digital scholarship and research. Developing digital dexterity can be challenging due to varying levels of technological competency and buy-in from staff. The University of Wollongong Library has committed to becoming a digitally dexterous organisation. This paper presents a case study focusing on a small group of staff who developed their digital dexterity organically in a small community of practice. In seeking to reshape and upskill its workforce, an innovative learning model was piloted to encourage both individual and group engagement with applications and technologies. The model centred on personalised, flexible learning and gave staff the scope to learn any digitally focused topic. This case study showcases one example of how staff have employed this model by engaging with the digital humanities. The collective nature of the learning process and freedom to explore enabled the development of digital dexterity through the attainment of, for example, coding literacy and digital curation skills. Both of these, supplemented by improved written and oral communication skills, were acquired to support technology-enhanced learning and research and data curation in a university environment. Through the adoption of a growth mindset the group learnt from setbacks, overcame challenges, embraced self-directed learning, and employed creative thinking. Collective endeavour assisted with the development of technical competencies and adoption of

new technologies. The digital dexterity initiative is a work in progress. The key takeaway that is emerging is that providing staff with the freedom to explore and innovate, work together and learn from each other to develop technological capabilities in communities of practice is effective for achieving work and cultural change.

54 - Internationalising the student experience: perspectives from an enabling IT course

Dr Pranit Anand

University of Wollongong

Developing communication skills, including an appreciation for cross-cultural communication is an aspirational aim for most education institutions. This is often developed through in-class group work activities involving, where possible, students from different cultural and linguistic backgrounds. Some institutions also focus on extra-curricular activities like sports and social clubs to promote the development of these important skills.

Similarly, most higher education courses expect students to develop adaptability skills when it comes to technology, which allows them to adapt and use appropriate technology tools for different problems. Technology courses are often challenged by emerging technologies, often by the time the instructions and activities are developed to teach an existing technology tool, it is already made redundant by better, more efficient technologies. Being 'future ready' has become a buzz word in most education programs, unfortunately without too much detail about how to go about developing this important attitude among students.

This presentation will share an assessment approach where students at UOW College Australia and UOW College HK collaborated on a project to solve real-life social challenges faced by not-for-profit organisations located in various developing countries. Small teams of students from both locations worked on developing social media solutions for identified not-for-profit organisation of their choice. During this process, they collaborated with each other, communicated with the not-for-profit organisations, developed all the tools and documentation and presented their solutions to the organisations, all via various forms of Internet and other communications technologies. This provided students in Wollongong and HK to experience truly transformative international perspectives, including developing a sense of responsibility for a shared planet, shared future, common humanity. Students also acquired an appreciation for appropriating technologies through immersive learning experiences. Feedback from the not-for-profit organisations have been extremely positive, and the students, while finding the activity challenging, found it to be extremely engaging and worthwhile.

64 - Blowing the dust off rare books and special collections

Ms Elizabeth Litting

University of Sydney

Background: The University of Sydney Library is home to one of the country's most impressive Rare Books and Special Collections (RBSC) departments. Since a significant organisational restructure in 2015, RBSC has sat within the Academic Services division, distinct from the general collection which falls within the division responsible for all other resources. Academic Services is home to the Liaison Librarian teams, and is the primary conduit for research and education support to the faculties and research centres of the university.

This very deliberate positioning aims to improve the opportunities for connections with teaching and research via increased outreach and promotional activity with the university community.

Methods: Since a change in RBSC management in 2016, a number of new outreach and digital 'experiments' have been implemented. Among them: 'Rare Bites', a lecture series featuring academics speaking passionately about lesser known items in the collection, 'Cabinet of Curiosities' to introduce new and exciting items from the collection to Library staff, and 'Rare Brews' - a brewing competition using recipes found in the collections. In the digital space, we have experimented with creating a virtual exhibition space, and creating rich experiences through students as curators video content (to varying success...). We are also gearing up for the launch of our new Digital Asset Management system, which will enhance discoverability and usability of our rare and special items.

Findings: Results have been mixed - engagement with the lecture series varies wildly depending on the speaker and topic (eg. Dr Karl talking about Isaac Newton's Principia was a full house, other talks have not fared so well). Rare Brews reached an audience that had never engaged with us before (and really captured the imagination of students). The challenge with our digital activities has been to find a balance between an exciting experience for users and a platform that staff can sustain.

Discussion: All of our activities are continuing works in progress and evaluation is ongoing. The proposed presentation would be very much along the lines of "this worked really well!" and "that was an epic fail and let us never speak of it again".

74 - Use of Emerging Tech in Teaching & Learning - Transforming the T&L Experience Through Immersive Technology (A Partnership between IT and the Academic Community at UON

Mr Craig Williams

University of Newcastle

Over the past two years, the IT Services at the University of Newcastle have engaged with academics across the institution to create a large number of innovative, and often world-first applications to address teaching and learning needs. These applications utilise a number of new technologies, in particular immersive technologies such as augmented, mixed and virtual reality, 3D scanning, simulation and visualisation. Presented here are a number of these applications from projects in Nursing and Midwifery, to Engineering, to Creative Industries, to Business & Law. For each project, academic subject matter experts have been heavily involved in defining the scope and direction of the project throughout its development.

This collaborative approach has resulted in applications that solve real problems, meet educators learning objectives for students and push new boundaries for IT. Each application was developed using a small team, with a rapid prototyping approach that utilises lean startup and agile software development principles and adapted to the higher education environment.

These applications include:

Virtual reality – Compromised Neonate, Environmental Assessment, Road to Birth, Virtual Anaesthesia, Victoria Theatre & Conflict Resolution

Augmented & mixed reality – Neural Visualiser, Brain Scan & Virtual Boardroom

3D Scanning – Deep Time & 3D Spaces

Simulation & visualisation – Acute Care, Sandbox, Tsunami Visualisation, Virtual Concrete Lab, Food Metabolism & Administering Medicine

All of these innovative applications have been tested with student trials and many are currently in use, in total reaching thousands of students across the University. These trials and general use have shown a strong positive reception by students both in terms of their acceptance of the new technology and the value it provides as a learning tool as demonstrated through surveys and software analytics. Aside from student use, these applications are also spawning new research opportunities, have received numerous awards and coverage in national and international media.

85 - Preparing and monitoring the mind-set for flipped information literacy instruction: a proposed design that integrates Google Analytics

Dr Jing Shen

University of Auckland

The proposed paper explores the possibility of accessing and intervening in learners' mind-sets while implementing the flipped teaching model. The study will gauge responses to an online information literacy demonstration, where learners not only are offered two different pathways to suit their particular mind-set, but also are constantly reminded of their potential and encouraged to take risks and contribute to the wider learning community. Google Analytics is integrated to collect data on learners' behaviours, and to further monitor any changes that might have occurred in learners' mind-set during the learning process.

The concept of mind-set first emerged in the field of psychology and is regarded as having vast implications for shaping learner beliefs and behaviours (Dweck, 2006). Generally understood as an individual's set of beliefs about his or her ability, mind-set has been highlighted as especially influential in the flipped teaching method (Carbaugh & Doubet, 2015; Chuang, Weng & Chen, 2018). Given the massive benefits and potentials indicated, further research is needed to fully explore the possibility and feasibility of mind-set intervention in flipped learning. In particular, in regard to ways of utilizing the mind-set concept to maximize the benefits of flipped learning, there are pressing questions remain unanswered. For example, how does one identify the best opportunity to intervene in a learner's mind-set? How can one best utilize new digital tools to gauge a learner's response and collect data on his or her mind-set whilst minimize the adverse impact of these digital tools? And how can messages be embedded in learning materials to intervene in a learner's mind-set?

This paper focuses on preparation for flipped learning, which can significantly impact subsequent in-class activities (Kim et al., 2014). It aims to prove the effectiveness of mind-set intervention in the preparation for flipped learning, and to shed light on the questions enumerated above.

The Smart Campus – Digital transformation and innovation

The flipped exam

Kylie Day, Melanie Pittard

University of New England

Everything is online these days … online admission, enrolment, teaching and assessment, even graduation is streamed online. Supervised hard-copy exams are still held the same way they were 300 years ago and apart from the ball point pen, not a lot has changed! Hard copy exams come with their own set of problems and remain the subject of ongoing debate as to their validity as an assessment tool. They are stressful for students,

often limited in pedagogical usefulness and logistically difficult to provide. Exams seem to be out of step with authentic online learning experiences yet they persist because of ongoing concerns about cheating.

UNE began implementing an Online Supervised Exams platform in 2017. It aims to resolve many of these issues, facilitate more authenticity, and provide a more accessible and flexible exam experience. Students sit the exam at their preferred location and can choose their start time within the availability window. There is no need to travel to a venue. Students are supervised in real time, using video, audio and screen-share technology. Biometrics and AI assist the exam supervisor to identify issues. Exam timetabling becomes less about mandating student presence based on venue capacity and more about the needs of the student. Accessibility is greatly improved, not only for students who have disabilities but also for students with work and family commitments or who live a long distance from an exam venue. The platform opens the way for exams with innovative question types, rich media and access to real world software tools to formulate answers. Students opt-in to this mode due to its flexibility in terms of the time and place to sit the exam. Surveys show 60% of students who sat their exam online believe it had a positive impact on their performance.

Anecdotally, some students are making their enrolment choices based on online exam offerings. With a very large online student cohort, we are also seeing an impact on retention rates when we offer more flexibility in exam options. This also has the potential to dramatically rebuild our notions of academic calendars, student choice and authentic assessment

V8 - Session information pending

V9 - Session information pending

V10 - Session information pending

2 - <u>3D Printed Objects and Learning Activities to Extend Student Learning Opportunities</u>

Mr Ghaith Zakaria, Dr Sonia Wilkie

Victoria University

Providing students' opportunities to gain hands-on learning experiences with real, physical objects can be difficult for many universities. Objects may be rare, fragile, expensive or restricted to laboratory environments. Laboratories are limited by the number of people they can accommodate, they're often in high demand, and it can be difficult to obtain educational resources such as cadavers, specimens or artifacts (AbouHashem et. al., 2015).

Drawing on Active Learning and Experiential Learning pedagogies, Object-based Learning (OBL) offers an authentic effective approach towards enhancing students' comprehension. As defined by Chatterjee and Hannan (2016, p.1) OBL "involves the active integration of objects into learning".

Review of literature demonstrates that 3D-printed objects provide a valuable tool to extend OBL activities into classrooms and home study. That said, a gap exists whereby students cannot undertake hands-on learning beyond laboratories, and are limited to engaging with textbooks, images, diagrams, and multimedia, all of which are non-physical 2-dimensional learning resources.

The solution was to develop classroom sets of 3D-printed models accompanied with a series of OBL activities to extend hands-on learning into and beyond classes.

In this presentation we will showcase a series of 3D-printed models with associated OBL activities which were designed and developed for Victoria University's revolutionary shift in learning and teaching approaches - The Block Model.

OBL activities utilising the models include: assembling the models correctly, identifying and labeling components to assist learning of terminology, exploration and discussion of the functionalities for the different components, and discussion combined with multimedia on how the components interact with each other.

Feedback from staff and students suggests that 3D printed models and the associated OBL activities assisted student learning and comprehension, and by letting the students take the resources home extended the amount of time they had to learn the concepts. Students also found the activities more engaging compared to the previous textbook based activities. Furthermore, the technical and design parameters considered during the design and printing of the models, such as producing the individual components as different coloured pieces resulted in a more tangible and engaging learning experience than was previously provided by textbook based activities.

Future Ready and the New Reality

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9 - A culture changing journey with video conferencing

Mr Geoff Lambert

Western Sydney University

Technology without a positive user experience is as useful as a boat anchor. In 2015, Western Sydney University had an aging fleet of video conference rooms, a culture among staff that avoided 'video' meetings at all cost, hours wasted in cars driving between campuses, and a string of continual complaints about the experience. Discussions of the possibility of teaching 'online' met with laughter and occasional tears.

Selecting Zoom as a low price, innovation opportunity that might at some point encompass rooms, personal use, and teaching webinars all in a single platform, Western Sydney began a journey that saw its online use explode – 50% growth, month on month for over two years. Today it has more than 15000 users and 1 million online meeting minutes each month. What began as a tactical response with aspirations of possibly enabling innovation, grew wings and took flight. Western Sydney went on to be one of the international case studies for Zoom, and exemplar to an industry only just beginning to explore software based solutions for video conference rooms and webinars.

As the stability and usage of video conferencing grew, so did expectations that all spaces should be future ready, and able to be connected online whenever was needed. The staff culture changed from one that avoided such meetings and teaching, to one that embraced and expected it. Today, it is almost impossible to schedule a meeting of four or more persons without at least one of them requesting to join via Zoom. The space types and standards have now been designed with Zoom in mind covering everything from meeting rooms to lecture theatres, collaborative studios, online teaching booths, and even simulation hospital wards and multi-use seminar rooms for upwards of 150 people.

In four years, the culture of Western Sydney University staff transformed around video conferencing, from avoidance at all cost, to every new space enabled. A thousand-fold increase in use, users, and trust. A culture

that is future ready. See how they achieved this in this 7 minute pictorial glimpse in to the life of Zoom at Western Sydney University.

16 - Peer Learning to Ignite Digital Skills

Mrs Elizabeth Delacretaz

Deakin University

With so many digital tools surfacing every day, how can staff in higher education keep up with technologies that are relevant to learning and teaching?

One way Deakin University Library is addressing the problem of maintaining and building staff digital skill sets is through an opt-in peer-learning model. Launched in April 2018, the Lightning Talks series gives library staff the opportunity to be collegially involved in learning by hosting short, sharp virtual sessions on digital tools. The series features staff who have volunteered to showcase, to a receptive audience of their peers, either a new digital tool they are exploring or a familiar digital tool they have expertise in.

Key benefits include:

• Providing HEW 4 – HEW 7 Client Services staff with experience in presenting online and to colleagues

• An opportunity for peer-guided learning and knowledge/skill acquisition

• Strengthening the existing culture of skill sharing and support amongst staff

• Enabling collaboration between staff across campuses and teams

• Offering the opportunity for staff to learn about digital tools to support teaching and learning activities

These sessions are recorded for staff who cannot attend the live Skype presentation, and for attendees who want to go back and review the session. Since commencing staff have delivered 5 talks, 114 staff attended and 38 staff viewed the session recordings. As a result of the lightning talks, library staff have shared their knowledge of relevant tools with students and academics, and have developed engaging online interactive activities embedded within the curriculum.

Learning online offers many opportunities that aren't available in traditional learning environments, and many challenges for those who approach it in the same way they approach traditional learning. If we want to deliver new and engaging online activities to students, we need to explore emerging digital tools. Lightning talks offer a better way to stay abreast, and tap in to the skills and experiences of our colleagues.

17 - Does adaption through Innovation drive new business operating models?

Mr Stuart Hildyard

La Trobe University

Innovation is hard and La Trobe has traditionally lagged behind other Australian universities who have invested in uplifting their Innovation capabilities over the last 5 years. However, to enable the University strategy 2018-2022 the Information, Communications, and Technology (ICT) team has specifically created a funding stream to focus on Innovation using emerging technologies and / or vendor partnerships to drive the opportunity for new business models.

The funding has allowed us to take a human centered design (HCD) approach for technology concepts that support and enable digitization. Initiatives that potentially add value to the organisation are supported through 4-12 week Proof of Concepts (PoC) and have included trials for Business / data analytics to support university space utilization, Robotic Process Automation (RPA), and a HCD initiative for customer service.

Current proposals include a vendor partnership for machine learning and artificial intelligence to benefit models around student success and retention.

Outcomes with our initiatives to date have included:

• the data analytics PoC being funded as a project into 2019,

• Executive support for further RPA investment,

• An establishment of a cross-functional business and ICT team for ongoing student system/s support and continuous delivery.

• Embracing HCD as critical in our new "ways of working" to support the La Trobe Cultural Qualities and drive engagement.

Also the design of the new proposed operating model in ICT includes investment to establish innovation leadership and a dedicated team that will keep abreast of new and emerging technologies or trial new ways of delivering outcomes with existing technologies.

Direct benefits for La Trobe include a pathway to experiment with new and emerging technologies and the ability to learn quickly how, and if, new technologies can be applied to improve student and staff experience, automate lengthy processes or improve productivity. This means the time to implement services of value is reduced with Innovation exploited and aligned to the University strategic plan for right speed delivery.

75 - IT Services Capability & Operating Model shift from a service provider to a pivotal strategic partner, a trusted adviser and enabler of organisational, education and research strategies.

Mr Anthony Molinia

University of Newcastle

Since the approval of the NEW IT Strategy 2017-2025 in June/July 2017, IT Services has made significant progress in developing the foundational components that underpin the execution of the NEW IT Strategy. The Strategy aims to support UON achieve differentiation against its competitors and to realise the goals of the NeW Futures Strategic Plan driving towards IT Services' mission to be a pivotal strategic partner, a trusted adviser and enabler of organisational, education and research strategies.

The focus in 2017 was on the 'WHAT' IT Services will do deliver on the mission in the form of the overall Strategy and the Operational Plan & Roadmap. The focus in 2018 is on the 'HOW' IT Services will deliver towards this mission. This has resulted in IT Services' need to drive innovation in 2018 on:

• The Right IT Investment

• Strategic Partnership & Alliances

• Capability & Operating Model

This Target Operating Model is founded upon the rapid and inexorable changes in the way technology solutions and services are designed, consumed, delivered and consumed globally. This model lays the groundwork for changes in tertiary education services and UON's broader operating model.

Traditional IT service delivery is no longer fit for purpose when a tertiary institution seeks to deliver a substantially improved education and staff experience. IT services are becoming much more lightweight, customised and flexible. This is largely due to the digitisation of data, systems and applications and the move toward commoditisation and managed services for large components of IT infrastructure and networking. Product Line operating models have successfully mitigated these issues in a number of industries. They enable 'omni-modal' IT, which means that IT services are delivered in a manner that best suits the type of product being delivered. Moreover the model optimises resource allocation.

The model is new to higher education in Australia. Extensive testing and validation was conducted to produce a TOM that is pragmatic and realistic, not purely aspirational. Implemented through a series of changes, this model will enable ITS to support UONs strategy to deliver a new education framework.

50 - A case study examining online instructor satisfaction

Mr Stafford Lumsden

University of Wollongong

As the number and frequency of online programs being offered in higher education continue to increase, so too does the amount of research dedicated to examining and exploring their impact on learners and learner outcomes. Yet in the literature there is less research dedicated to examining instructor outcomes in online programs, especially with regard to the feelings and perceptions of satisfaction instructors derive from their online teaching.

This case study examined a cohort of instructors engaged in synchronous, online videoconference instruction in a graduate teacher training program at a mid-sized private university in Seoul, South Korea. Using a mixed methods approach, instructor responses gathered from interviews, and the Online Instructor Satisfaction Measure, and observation of videoconference lessons were triangulated to establish whether or not a relationship might exist between teaching presence and instructor satisfaction with the aim of describing that relationship.

In addition to finding that satisfied instructors show more teaching presence indicators than instructors who are not satisfied, two related issues emerged from the case study that have implications for future research. First, the overall context of the teaching program must be taken into account when describing online teaching and learning. Second, existing indicators of teaching presence based on text-based instances of online teaching may need to be revised to take into account the increased volume of synchronous, videoconference lessons and use of other multimedia that are quickly becoming mainstream in online teaching and learning.

In Unity is Strength

20 - Making better use of the "i"s: Innovating with Industry at the Interface

Dr Cynthia Cliff

Queensland University of Technology

BACKGROUND: In March 2017, a consortium of 15 global pharma companies and MTPConnect contracted QUT to develop and deliver The Bridge Program. One hundred participants completed the program in 2017 and a further 100 will complete at the end of 2018. QUT's involvement in this initiative offers a unique opportunity to examine value co-creation processes taking place at the university-industry interface.

As global pharma and QUT reps sat down to plan the program, a concerning misalignment of vision for its capstone 3-day residential component emerged:

• Industry's expectation was strongly aligned with an industry norm comprising 3 days of high-level didactic delivery by globally significant industry figures; and

- The QUT team was focused on meeting the learning objective to develop participants' capacity to enhance pharmaceutical commercialisation outcomes.

Clearly, compromise was needed to deliver on expectations.

The overlay of an immersive, interactive, app-supported, experience component that would to some extent "gamify" and promote embodied participant engagement with the materials presented and the high level speakers themselves throughout the 3-day residential was proposed.

This suggestion initially met with polite scepticism, but as time went on and planning for the residential progressed a number of tipping points were observed as the idea started to take hold, and was eventually completely taken over by the consortium.

This paper examines the lessons for university-industry innovation in teaching and learning that can be drawn from the tipping points observed during development of the Bridge Program.

METHODS: Data collection and analysis will be completed by mid-November 2018. A desk audit of meeting notes and minutes is being used to map the collaboration processes and their timelines throughout the project. Semi-structured key-informant interviews with consortium members will provide a range of individual perspectives and first-hand insight into consortium members' experience and perceptions of factors influencing their attitudes, engagement and inputs at various key points throughout the value co-creation process.

DISCUSSION: The aim is to identify and characterise a set of key elements that have contributed to the Bridge Program's growing reputation as a significant and game-changing model for learning and teaching innovation at the university-industry interface.

22 - Cross-Faculty community of practice in Technology that Enhances Learning at UOW
Dr Sue Downie, Dr Moira Stephens, Dr Xiaoping Gao, Mr Kenton Bell, Dr Simon Bedford, Dr Oriana Price
University of Wollongong
Background: This project explored the acceptance and use of technology in learning and teaching among staff and students across 6 faculties at UOW. The WATTLE (Wollongong Academy of Tertiary Teaching and Learning Excellence) community initiated a 'hot topic group' (HTG) in Technology that Enhances Learning (TEL), with over 50 members, and its mission is to provide networking and sharing of practices between academic and professional staff and students. The use and perceptions of the wider university towards TEL however is largely unknown, and the aim of this study is to clarify the use and perceptions of TEL. The HTG has been given opportunity to comment on an institutional issues paper on technology related issues for staff across UOW that will be presented to the DVCA. Results from a research study undertaken by our TEL HTG on the staff and student perceptions on the state of TEL at UOW will help inform this issues paper.
Methods: This mixed methods study first surveyed staff and students and then sought a more in depth exploration through focus groups: 48 students and 75 professional and academic staff completed the online surveys, 29 students and 24 professional and academic staff participated in focus groups.
Findings: Practical barriers for staff in implementing TEL were: fear, time, institutional culture geared towards research rather than teaching, lack of knowledge and Technical/support issues. Pedagogical barriers were that technology is perceived as a distraction, face to face learning is valued more, the potential for only superficial learning, and lack of context and relevance. Practical promoters were: it is modern and expected, equalizing, efficient, and used at other universities. Pedagogical promoters were engagement, authenticity,

feedback, collaboration and flexibility. When asked to self-report technology savviness, both staff and students rated their own savviness higher than they rated each other's savviness and capabilities. Discussion: Support of staff and students in the contextually relevant use of TEL requires pedagogically sound professional development opportunities, the potential inclusion of authentic TEL opportunities within the curriculum, one on one support for staff and students, and formal institutional recognition of time and resources spent on developing TEL.

27 - In Unity is Strength - A story of Global Collaboration by edX Partners, celebrating best practice in the MOOC Space.

Mrs Ali Ogilvie

University of Adelaide

This series of 20 slides will be mainly imagery and relevant info-graphics charting the principles, objectives and achievements of the Microsoft led Assessment Symposium.

Featuring narrative examples of how this band of online educators utilised the value of a level playing field, shared technical limitations of our common platform (edX) and a desire to work together to improve user experience and share best practice in student centred design.

Between March 2017 and present day, this group has physically met 4 times (in Seattle, Adelaide, Vancouver and San Francisco) and has worked remotely together in between these sessions, forming a fruitful and positive community of practice with a safe-to-fail ethos.

Evidence will be shared within this presentation documenting how Adelaide have leveraged the combined knowledge and experience of this group to access and beta test new learning tools (a Harvard designed chat bot), implement and share research into learner behaviour, cross promote MOOC courses from partner institutes to learners within the same target market and forge new and rich working groups to explore improvements to the technical side of the platform.

In addition to the Microsoft Symposium group, the Regional edX Partnership will be detailed as a comparison, drawing on the difference in dynamic when consortium members are well known to each other geographically and compete within the same domestic market for the same (on campus and international) students. Discussion will focus on the strengths and opportunities that come with sharing experience locally with a smaller and more culturally aligned group versus the scope and depth of knowledge exchange with a truly global agenda.

78 - Skin in the Game - Strategic Partnerships in Higher Education – Balancing market contest-ability and strong vendor relationships

Mr Martin Fuljahn

University of Newcastle

Critical to a University's delivery of digital transformation in teaching, learning, research and infrastructure is it's ability to source IT goods and services in an timely and cost-effective manner. IT sourcing in the higher education sector is plagued by a range of issues, such as lack of category management expertise, one-size-fits-all tools and processes, intensive focus on compliance to the detriment of business value delivery, lack of communication and transparency with vendors, and one speed of operation resulting in procurement being ineffective in achieving its value-for-money proposition and exposing the University to unnecessary risk. To address those issues, the IT Services and Strategic Procurement units of the University of Newcastle (UON)

have partnered to develop and implement a new framework for conducting IT sourcing, known as Strategic and Partnerships and Alliances (SP&A). The new framework enables greater business agility, flexibility and contest-ability in the sourcing of IT services, supporting both managed services and panel partnership arrangements. The SP&A model leverages capability-based planning to identify bundles of services to support the University's short, medium and long-term IT objectives. It introduces a Master Partnership Agreement framework that allows IT partners to respond quickly to work orders, which are subsequently assessed against a multi-dimensional scorecard to determine which proposal offers the best value. The relationships with the strategic suppliers (or partners) are based on mutual trust and an open discourse. The SP&A model was trialled in early 2018 in the establishment of the managed services for Central Computing with a leading IT vendor, and a partner panel is in the process of being established for the provision of Data Services. Later in 2018 and over the coming years many new panels will be formed to deliver services in capability areas such as digital experience, constituent relationship management, networks management, end-user computing and interactive technologies.

68 - Institutional Technology Adoption and Integration: A Holistic Grass Roots Approach to Inform Institutional Transformation

Dr David Bruce Porter, **Ms Kristy Newton**, **Dr Sue Downie**, **Mr Dave Rigter**
University of Wollongong

Background: The capability to integrate educational technologies has become increasingly important for higher education institutions to be scalable and competitive. Addressing the barriers and enablers for the adoption of educational technologies can potentially catalyse institutional technology initiatives. To address one university's technology adoption challenges, an ad hoc group of academic and professional staff, representing information technology, the library, educational design, and faculty units engaged in a collaborative reflection and institutional scan to identify the barriers to adoption and potential solutions.

Methods: Beginning in April 2018, the group met fortnightly over three months to map the issues related to supporting technology integration across the institution. Through discussion, review of feedback from academics and professional staff, and considerations from the literature, themes emerged, presenting a "mesh" of inter-related issues contributing to staff disengagement from the institutional strategy for technology integration.

Findings: The emergent barriers--infrastructure, learning spaces, service model, digital literacies, and motivational factors–-aligned with previous findings from the literature. Addressing these issues on behalf of academics and professional staff across the institution in building digital capability transcends the single-unit ownership. The resulting recommendations from the process indicate the need for cross-functional teams and ongoing engagement and evaluation across the institution to ensure better alignment of resources to support staff.

For participants, identifying and defining these issues built an awareness of the importance of more holistic thinking and broader institutional engagement. Furthermore, the process underscored the benefit of prioritising long-term strategies, over quick fixes and short-term wins in addressing the issues.

Discussion: Addressing technology integration barriers from the grassroots level enabled the identification of issues and the breaking down of silos. Given their positioning within the organisation, the staff responsible for enacting institutional technology strategy are uniquely placed to identify the gaps in support for the strategy. This process brought together several units and enabled a broader appreciation of the institutional

challenges, as well as yielding opportunities for further cross-unit collaboration. The ability of the institution and stakeholders to collaboratively respond to and address barriers is likely to catalyse institutional transformation.