



2019 ITP Research Symposium

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Eastern Institute of Technology

Presentation

Abstracts

Partnerships for Families**Joanne Alderson and Donna Kenny**

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Joanne Alderson has worked across education and social care in NZ and the UK. She currently lectures for the Open Polytechnic of NZ in the Initial Teacher Education programmes, holding current teacher registration, a Dip Tchg and MA in Integrated Provision for Children and Families (Penn Green Research, Development and Training centre). Joanne published in 2008 & 2018.

Donna Kenny has worked across education and social service in NZ and Australia. She currently lectures for the Open Polytechnic of NZ in the Initial Teacher Education programmes. Holding current teacher registration, a Dip Tchg and M Ed Psych. Donna published on 2018.

The NZ Early Childhood Curriculum emphasises the essentiality of a holistic approach and connectivity across all the contexts of a child's life and the people involved in it. In 2014 and 2015 we undertook qualitative, mixed-methodology research, in Aotearoa New Zealand, to explore what was occurring in the communities of young children and their families and whanau that might evidence or otherwise the existence and nature of connectivity across the Early Childhood Education (ECE), and some of the other, contexts of children's lives. In particular they explored, through the voices of participants, partnerships between ECE centres and organisations that were involved in the lives of young children and their families. These voices remain a valued factor in the formal analysis and reporting of the research. Leaning on the theoretical perspective of Bronfenbrenner's ecological model assisted in this exploration of the various contexts and in looking forward to provide some recommendations. The researchers' findings reverberated the claims of the relevant national and international literature they also reviewed. Also revealed through the research, in the face of undeniable challenges, was a desire for transformational partnership and a willingness to change across the ECE sector and participant organisations.

How teaching teams and students benefit from building partnerships with industry for product development in the tourism sector

Bronwyn Alton

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Bronwyn Alton is a tutor in the Tourism and Hospitality Management team at Toi Ohomai. She has been in the team for three years and was awarded the Toi Ohomai Teaching Excellence award in 2017 for her commitment to developing applied learning experiences and assessments that engage students in their learning journey. Bronwyn came to Toi Ohomai from industry and has experience in the tourism sector. Her personal interest are looking at how the tourism industry can become business leaders in sustainable business practice.

The teaching team and students have taken a principal responsibility for conducting market research for Rotorua business 'Canopy Tours'; this has allowed students to gain real-world experience in the research and product development cycle. This partnership means that all parties have shared their skill sets and were able to build capability, which has manifested in a positive result for the company and the students alike.

Canopy Tours is a tourism business based in Rotorua that offers a three-hour zipline adventure through native New Zealand forest. They are a small, award-winning company who are continually looking to develop their product to meet the needs of both their growing customer base and the environment in which they operate.

Our students enrolled on the NZ Dip Tourism Travel Level 6 & NZ Dip Hospitality Level 6 programme participated in research for Canopy Tours as part of their 'Product Development' paper. The applied nature of this project allowed students to be involved in an authentic learning experience under the joint guidance of the tourism tutor and Canopy Tours staff.

This presentation will explain the process and institutional steps, which were undertaken to ensure the organisational goals were met for all parties.

Come and listen to what we've been doing with this local company who value the work of our collaboration and how a business challenge can create long-term partnerships that continue to provide tangible results for both parties and our broader community.

Design and sustainable values: a reflective case**Mazin Bahho**

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Born in Baghdad, Iraq, Mazin worked as an architect in Iraq, Jordan, and the UK in fields of architectural design practice, site residency, and supervision. He is a senior lecturer of 'Design' at EIT Hawke's Bay since 1996. In 2018 he completed his PhD studies at Victoria University of Wellington, School of Architecture, continuing his passion for sustainable architecture.

It is evident that the world we live in is now becoming increasingly collaborative and the ecological challenges we face require complex and interdisciplinary thinking. Hence, this study is an experiment that aims to explore how an integrated and interactive strategy for design education was adopted in developing ideas for a sustainable building project involving a group of students. It also examines the capacity of influencing their environmental values through their engagement in the project.

So this research investigates how a reflective teaching strategy can help participant students evolve their design concepts for a sustainable project? And whether this experience can lead to influencing their ecological values towards behaving sustainably? It is a case study of developing an interactive strategy for creating and evolving the design concept for a sustainable building. It also entails investigating the participants' environmental values through a series of pre and post engagement interviews, to analyse and understand why they become engaged in the project, and how their behaviour might change towards sustainability.

The strategy is judged to be successful because it served to enhance the students' understanding of design and designing within the contemporary context. Interviews with the student participants highlighted the importance they give to living sustainably and valuing ecological and organic living practices. It found that they were self-motivated to pursue environmental initiatives, and realised the significance of encouraging others to make environmental investments. The discussion revealed a number of instances where participant students demonstrated active pro-environmental behaviour.

Analytic, descriptive and prescriptive components of evolving jazz:**A new model based on the works of Brad Mehldau****Dr Mark Baynes**

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Mark Baynes is a jazz pianist with a contemporary leaning. Mark's doctoral research has provided an analytical lexicon that can be used to understand music in terms of what is defined as consonance and dissonance found in western music as a whole. Although informed by academia, Mark is primarily a performer, composer and accompanist residing in Auckland, New Zealand. Mark is a presenter of 95bFM's The Jazz Show, and writes the X-Factory column for NZMusician Magazine. Recent works include a pianist for Chicago the Musical in Seoul, Korea, and producer and pianist of Henrique Morales' debut studio album (2016), a collaboration between Brazilian and New Zealand musicians, sung by Morales and written by Fernando Corona.

Jazz has steadily evolved from its inception in the late 19th century to the present. As is the case for other genres, musicological analytic research on jazz evolution has lagged behind its practice; consequently, there is a paucity of in-depth analytic research on the music of recent innovators. Among the most recent examples of this evolution, the works of Brad Mehldau as a solo/ensemble pianist and as a composer arguably embody some of the most compelling innovations in the field. Non-academically oriented jazz writers and fans have consistently assigned these works vanguard status, but Mehldau's output has not yet been sufficiently examined to prescribe performance methods. This presentation contains (1) analysis of improvisation contained within Mehldau's music, and definition of a new analytical lexicon derived from a holistic study of consonance, dissonance and (2) research into perceived motivation in music by cognitivists such as David Huron and Leonard Meyer. This presentation demonstrates, on the piano, aspects of consonance and dissonance, and how they are fused together to create a more holistic musical statement.

Hairdressing and beauty students developing their employability skills during a marae visit

Tania Berryman and Jewelle Lloyd

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Tania Berryman is the programme manager at ToiOhomai Institute of Technology and recently completed her Master in Education. With an extensive background in teaching which stemmed from owning a business in the industry, teaching and national quality assurance for the industry qualification. She has a keen interest in facilitating pathways for her students, and as such has delved into the implications of site based employability skills.

Jewelle Lloyd is a senior academic staff member at ToiOhomai Institute of Technology With an extensive background in teaching which stemmed from a career in the industry she now specialises in creating innovative teaching opportunities for students to extend themselves. Jewelle was the motivator for gaining the opportunity for students to attend the marae visit to build their skills and recently featured in an article relating to sustainable hairdressing.

The employability of tertiary graduates is a major national focus in Aotearoa New Zealand. Developing employability skills that are sometimes called 'soft' skills have been identified as important for learners in the New Zealand vocational training context. Lists of the key employability skills for a workplace are outlined in multiple publications such as positive attitude, time management or team work.

This is a story about the nannies of a local marae welcoming the hairdressing and beauty students onto their marae, these nannies received haircuts, blow waves and manicures. The story is aligned with research literature and policy documents in order to identify models – both theoretical and practical – that support embedding employability skills into pedagogical practices in vocational education training programmes.

Teachable moments – all tutors treasure these – while the visit was initiated to have the students build their skills and give back to their local marae, the tutors found themselves experiencing something special. The confidence the students gained in this experience may never come from the classroom experiences. The visit highlighted the importance of addressing students dispositions and student's willingness to actually deploy the targeted employability skills. The marae visit was a powerful strategy for prompting learners to see connections between employability skills and their dispositions.

Based on the marae visit story this presentation explains the limitations and offers a number of recommendations to scaffold vocational educational tutors in developing their pedagogical practices to support the embedding of employability skills.

NZDB L5 outcome and destination survey - A Model for Future Use**Sue Brotherton and Leoni Drew**

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Sue Brotherton is a Programme Manager for Business Management – West and Leoni Drew is an Academic Advisor (Quality) at Toi Ohomai Institute of Technology. Both have previous industry and tertiary teaching experience and hold masters level qualifications.

The New Zealand Diploma in Business Level 5 is an eight course (15 credit per course) qualification which was offered for the first time at Toi Ohomai in 2018. The first graduates finished in October 2018 and this research is designed to capture the student perception of their learning in relation to the graduate outcomes of the course, as per the 2019 NZQA review of compulsory GPO outcomes, and also their destination post study. This information will serve to show how effective the learning is and overall student satisfaction which will allow reflection on the teaching and learning experience. Also, the pathways chosen by the graduates will allow us to inform future students of potential pathways, improve stakeholder relations (where the student has chosen employment) and allow better forecasting for pathways, particularly into our Bachelor of Applied Management degree. It is envisaged that this research will be repeated on an annual basis. This is important to determine how well we currently meet our community needs. As a dedicated regional provider it is important to us to meet our commitments to our stakeholders.

The 10 minute presentation will display the results of the research and reflection on changes to delivery, if required. Also, the destination of the surveyed students.

Otatara: people and place

Linda Bruce

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Permanent part-time tutor at IDEAschool, EIT Hawke's Bay. Diploma in Visual Arts & Design, EIT Hawke's Bay in 1993. Practising sculptor since graduating, with ceramics a particular focus.

Presentation will present research findings from the founding years of this institution. Using video interviews from the Otatara: people & place hui, founding director and anthropologist Dr John Harre will outline his philosophy of community education and life-long learning.

With Dr Harre's support an extraordinary arts project emerged, the Otatara Arts & Crafts Centre. Given freedom to explore new ways of engaging with the community, Para Matchitt, Grey Wilde & Jacob Scott lead work scheme labourers and people interested in the arts to put a place together for the arts community. Years of struggle building the place built a close-knit community, pivotally involved in the growth of bi-cultural contemporary art & design in Aotearoa and the development of the first Craft Design qualifications. The story will largely be told through video clips of the people involved, filmed during the Otatara: people & place hui.

Citizen science and the climate crisis**Peter Bruce-Iri**

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Peter teaches at NorthTec on the Bachelor of Applied Management and related qualifications. His research focuses on regenerative food systems and climate change and he has published two books. Peter lives with his wife Huria in Whangarei, New Zealand.

Supported by a 40 year interest in organic growing my research themes evolved from local food, to food policy and regenerative food systems, with methodologies evolving to community based participative research (CBPR). Communities were easy to find as industrial food systems marginalised small farmers, growers and retailers. Methodologies evolved from participant feedback on reports, to greater involvement in the earliest stages of co-design enabled by technologies such as Loomio and documents shared in the cloud.

Learning from the Drawdown Project that pasture can sequester as much carbon as forest led me to another community – regenerative farmers. Their marginalisation is compounded by isolation from their peers. Deprived of government, industry and research resources tailored to conventional farming, regenerative farmers relied on personal observation, intelligence, intuition and reflection. A new project started with a brief summation of current reality for regenerative farmers and a meeting with participants to begin to shape the project.

Current science about soil carbon sequestration in New Zealand appears out of step with international projects such as 4 per 1000. Progress to support regenerative farming is slow, as policy is informed by questionable science, and industrial food interests heavily influence resource allocations and societal norms.

Supported by stakeholder theory, CBPR hopefully leads to a paradigm shift in science and research. Power shifts from the ordained elite, to the wider community, including the citizen scientist, and practitioner observation and learning, triangulated with science and research liberated from vested interest to help avert the worst of the climate crisis. This shift will feature research funded from, and belonging to, the commons, with outputs no longer protected by the Internet paywalls of journal aggregators. Focus will shift from achieving publication to adding pragmatic value to the communities science and researchers serve.

Applying ethical frameworks to mobility: the case of driving**Mary Butler**

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Professor Mary Butler is an occupational therapist with an interest in ethics and mobility. She has written about GP approaches to medical assessment of fitness to drive as part of a longitudinal study of driving cessation. She coordinates the master's program at the School of Occupational Therapy, Dunedin.

Driving is important for everyday functions, such as shopping and social participation, and for psychological functions, such as autonomy, protection and prestige. Conversely, driving cessation is associated with a significant decline in general health and physical, social and cognitive function. Driving cessation also creates exposure to additional risks of injury or death because older people have higher rates of mortality as pedestrians, cyclists and passengers of public transport

There is no gold standard for screening older drivers, yet most countries impose some form of screening on older drivers. Older drivers are screened because of an elevated crash risk and risk of mortality. However, older drivers' elevated risk for injuries and fatalities in traffic can mostly be attributed to their physical frailty (the frailty bias), while the observed higher crash risk per exposure has been shown to be a result of a 'low mileage bias.'

There are ethical risks involved with all screening, and screening older drivers is no different. For example, screening may cause some people give up driving prematurely, with all the attendant risks associated with this. In other situations, screening may not be adequate to identify drivers who are genuinely at risk of harming themselves or others.

Screening older drivers is presented here as an ethical dilemma, where private mobility is balanced against public safety. This paper draws on the framework developed by Drolet (2018) to embed the conversation in general ethical principles, and the framework developed by Upshur (2002) to deal more specifically with public health issues. The ethical issues around screening older drivers provide a lens to consider the ongoing community mobility issues for older people (and hence the whole community).

Opportunities missed and lessons learned; reflecting on the relationship between researchers, organisations, and communities.

Hana Cadzow

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Hana Cadzow is a Senior Lecturer in the Engineering Technologies team at Otago Polytechnic. Currently working on research projects to make engineering education more accessible to both industry and women, her other research interests include sustainable development, and experiences of women in the workplace.

This presentation reflects on opportunities missed and lessons learned, when considering the relationship between researchers, organisations, and communities. It draws on personal experience from a range of academic and institutional projects, including two key case studies from the presenter's own work, that are considered and contrasted as a springboard for wider reflections.

The first case study is of a masters level research project exploring the experiences of women in Freetown, Sierra Leone, as they engage in urban agriculture. The second is an ongoing research project into the development of a new Degree Apprenticeship model for the delivery of the Bachelor of Engineering Technology (Asset Management). These projects provide a starting point for a conversation around why we do research and how we can be sure that the communities we are engaging with are driving, and benefiting from research projects. How can we ensure it becomes research with them rather than research about them?

The sustainable livelihoods framework is explored as one possible tool for assessing how the research process and outcomes may be affecting communities. How is the research process acknowledging the various capitals (Human, Natural, Financial, Physical, and Social) available to the community? Are we, as researchers and organisations, using these capitals responsibly and providing something of value in exchange? How can we tell if our research is having a meaningful impact in the communities we work with?

Building environmental sustainability knowledge into management studies**Adele Carson and Don Kannagara**

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Adele Carson and Don Kannagara are Senior Lecturers at Toi Ohomai Institute of Technology, working mainly with Bachelor's and Post Graduate students. Adele's research interests are on the education and communication on environmental sustainability – particularly in relation to youth and young adults. Don's interests are in the applications of cognitive psychology in education.

“How can embedding ‘sustainability competencies’ into management studies enhance student awareness of environmental issues and individual agency?”

The aim of the research was to determine the levels of ‘sustainability competencies’ among students’ at two different educational levels: NZQA level 5 and 8, before such issues were taught and then after teaching on such issues.

Methodology involved designing two assignments to teach one or two of these ‘competencies’ at each level, along with an assessment survey for each level to collect pre and post student opinions about environmental sustainability. A pre-survey was completed prior to embarking on an assignment embedding some of these key ‘competencies’, then the same survey was employed once more post completion of the course work, to ascertain any change. Methodology required student self-analysis, using a survey with approximately 17 Likert type statements, plus several demographic questions about respondents constituted the methodology.

Findings from the pre and post surveys revealed that the lower level class showed considerably higher improvement in most of the aspects related to sustainability issues. This improvement was more obvious at the higher level class. However, their understanding of intergenerational equity grew much more as a result of the researchers’ efforts to embed this key ‘competence’ into their learning. Results for the level 5 students’ showed positive change on eight of the Likert statements covered, including awareness and concern of the world’s growing population, concern and understanding of human impact on sustainability and the impact they believe individuals and groups can have on sustainability. The survey also revealed that the internet appeared to be a main source of information regarding environmental issues.

In conclusion, embedding sustainability at the lower levels appears to be the more crucial area.

The researchers’ are continuing this project, enrolling other teachers’ and courses onto the project this year.

Project-based learning with communities: Case studies from two programmes**Adon C. M. Moskal and Caro McCaw**

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Adon Moskal is a lecturer in Information Technology at Otago Polytechnic in Dunedin. His research is centred on improving teaching and learning, with a particular focus on practical applications of research for teachers “at the chalkface”. His research interests include learning analytics, educational technology and student evaluation.

Caro McCaw is an Associate Professor and Academic Leader in Communication Design at Otago Polytechnic in Dunedin. She is involved in a wide range of local community and regional development projects often working with collaborative student-staff teams, and local community groups, including museums. Her research focuses on social practices in Art and Design, and project-based learning.

In this presentation, we outline three projects in which students successfully engaged with our local communities. Community engaged learning and teaching (CELT) forms an important part of higher education’s ‘third mission’ of social and civic engagement, and has been shown to be a rewarding experience for all those involved. We begin our talk by describing the projects and how they came to be introduced to the Polytechnic. These projects are from two different departments (Design and Information Technology), involve different local community groups, and illustrate varying levels of community engagement. We explore key stages in their development, and report on feedback from participating staff, students and community partners. In particular, we focus on the beginning and end stages of projects as important phases that can impact overall ‘success’. As well as identifying elements of successful project engagement, we also offer a critique of our existing methods, highlighting unmet needs, opportunities for internal networking and interdisciplinary projects, and reconsidering how success is currently—and could be—evaluated. We offer recommendations in ways to foster productive and sustainable institution-community relationships.

The Demise and the 'demise' of the Art School

Dr. Graeme Cornwell

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Dr. Graeme Cornwell (b 1954) MFA, PhD (Art History, Theory and Criticism)

Graeme Cornwell has been engaged in lecturing at tertiary institutions since 1980. He has taught at Sydney College of Arts, (Sydney University) COFA, New South Wales University, Nepean (Western University of Sydney); Auckland University of Technology, Otago Polytechnic, Eastern Institute of Technology, Nelson Marlborough Institute of Technology and at Toi-Ohomaiai Institute of Technology. He has taught a wide variety of subjects ranging from Drawing and Design, Printmaking and Painting , and Computer Graphics. For the last 20 years he has taught Art History, Theory and Criticism.

Graeme is also a practicing artist and writer engaged in a variety of practices and theoretical investigations.

'The Demise and the 'demise' of the Art School' traces the history of neoliberalism and its effects on Visual Arts education education since 1983 and in particular how neoliberal policies have affected both secondary schools and tertiary institutions in New Zealand and how this is shaping the way art and design practices are both taught and practiced in the new millennium.

The presentation offers significant insights into the problems facing tertiary educationalists engaged in the Visual arts, Design and the Creative Industries and offers some ways in which solutions may be found.

Social cognition, executive functioning and IQ: Important influences on adaptive functioning in children with FASD

Andi Crawford

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Andi Crawford has a PhD in Clinical Neuropsychology and is a registered Clinical Psychologist. Andi is currently working at both the Child Development Service and Te Ara Manapou (Pregnancy and Parenting Addiction Service) at Hawke's Bay District Health Board. She attended FASD diagnostic training at the Asante Centre, Vancouver, Canada in 2011 and continues to work and educate in the field of FASD. Andi has been a member of the Ministry of Health FASD Clinicians Advisory Group (NZ) and is currently co-chair of the Australian New Zealand FASD Clinical Network.

This doctoral research involved partnership with Hawke's Bay DHB Child Development Service and Te Wāhanga Hauora Māori in order to investigate the factors that predict adaptive functioning (life skills) in children with Fetal Alcohol Spectrum Disorder.

Tamariki with Fetal Alcohol Spectrum Disorder (FASD) often struggle to develop the life skills that enable them to function well both at home and at school. Difficulties with these life skills, or adaptive functioning, can occur irrespective of IQ level. Research suggests impairments in executive functioning (e.g. planning, flexible thinking and self-regulation) are thought to underlie many difficulties in adaptive functioning. However, it is also recognised that difficulties with social thinking (e.g. recognising emotions, understanding another person's perspective and social problem-solving) are vital to successfully navigate today's world.

This research project aimed to investigate which factors (IQ, executive functioning, social thinking and Adverse Childhood Events, ACEs) predict adaptive functioning in tamariki (8-12 years) with FASD. A comparison group was included which was matched on age, gender, ethnicity, maternal education and deprivation index. Consideration was also given to the context of psychosocial complexity that exists for tamariki with FASD in this study, including implications for required support services.

Findings are discussed with regard to both the psychological literature, colonised history of Aotearoa New Zealand and Te Ao Māori worldview. Solutions are discussed which aim to; build skills in the child (Awhina-tia tamariki mā), build support in the whānau (Manaaki-tia whānau), be culturally responsive (Whakahoki-tia Tikanga) and develop solutions that are holistic (Kaupapa) and are based on both Māori and clinical frameworks (Hononga).

**Toitū te Kainga, Toitū te Ora, Toitū te Tangata –
healthy homes, healthy people**

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Dr Tepora Emery is from Ngāti Unu ki Maniapoto and Te Arawa. Tepora is the Kaupapa Māori Research Advisor at Toi Ohomai Institute of Technology. As part of her role she is leading the Toi Ohomai hosted “Toitū te Kainga, Toitū te Ora, Toitū te Tangata – healthy homes, healthy people” project.

“Toitū te Kainga, Toitū te Ora, Toitū te Tangata – healthy homes, healthy people” is an interdisciplinary National Science Challenge research project that is investigating the housing needs of whānau who desire to return and settle, effectively and sustainably, on ancestral papakāinga lands. At the centre of the research is the Matekuare Whānau Trust (Ngāti Whare, Ngai Tuhoe) who are developing their papakāinga at Tāwhitiwhiti on the outskirts of the Urewera forest in Te Whaiti. In support of this aspiration, the multicultural, interdisciplinary research teams including Scion CRI and TallWood Architects are working towards the creation of a prototype of a healthy, affordable, prefabricated modular home for papakāinga living. This presentation provides an overview of the project with a focus on the collaborative design, planning and development process for the whare (house).

Supporting community engagement through teaching, student projects and research**Paul Ewart, Hong Zhou & Ken Louie**

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Academic staff and research leader with Centre for Engineering and Industrial Design, Wintec. Recipient of the QEII Technicians Award [2008 Imperial College London]. Visiting fellow [2008 Chemnitz University of Technology Germany]. Fulbright Fellow [2010-2011 University of Texas-Pan American USA]. Erasmus visiting academic [2018 Technical University of Liberec Czech Republic]. Co-founder AME Powder Technology Limited. Interests; manufacturing processes, transport technologies and sports engineering. Specific expertise with advanced materials design and testing.

The Education Acts statutory obligations for ITPs are not supported by the Crown funding model.

Part of the statutory role of an ITP is "... promotes community learning and by research, particularly applied and technological research ..." [The education act 1989]. In relation to this a 2017 TEC report highlighted impaired business models and an excessive administrative burden as restrictive and impeding success. Further restrictions are seen when considering ITPs attract < 3 % of the available TEC funding for research, and ~ 20 % available TEC funding for teaching, despite having overall student efts of ~ 26 % nationally.

An attempt to improve performance and engage through collaboration (community, industry, tertiary) at our institution is proving successful. The cross-disciplinary approach provides students high level experience and the technical stretch needed to be successful engineers, technologists and technicians.

This study presents one of the methods we use to collaborate externally through teaching, student projects and research.

Work Readiness of New Graduate Nurses

Diana Fergusson

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Diana is the Research and Innovation Manager at WITT, is a nurse academic and has an interest in nursing education and research. She is currently undertaking doctoral studies on work readiness of new graduate nurses.

A small regional New Zealand School of Nursing delivers the Bachelor of Nursing programme using a 'Modern Apprenticeship' (Benner et al, 2010) framework, developed in partnership with nursing leaders from around the province with a view to increasing work readiness of graduates. The purpose of this research project was to explore the perception of work readiness of the New Graduate Nurses, graduating from this programme.

A self-administered questionnaire using the validated 46-item Work Readiness Scale (Walker et. al, 2015) gained empirical data from nurses first as Year 3 students at the end of their degree and then as New Graduate Nurses, as well Clinical Practice Tutors and Registered Nurse Preceptors. Graduate employment and demographic data was also collected.

All graduates except one gained employment and two-thirds were employed in a clinical area the same as / similar to or related to their final undergraduate clinical placement. Work readiness was scored highly across all four participant groups. Nurses' own perception of work readiness did not change from being a Year 3 student to a New Graduate Nurse. Work readiness was found strongly related to organisational acumen, followed by personal work characteristics, work competence and social intelligence.

Overall the 'Modern Apprenticeship' model of nursing education supports work readiness of New Graduate Nurses. The framework focusses the nursing education experience on learning to think like, act like and be a nurse, mirroring professional nursing practice.

Patu Up! That's us**Rachel Forrest, Maria Pearson, Levi Armstrong**

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Dr Rachel Forrest. BSc Zoology (UC 1995), Postgraduate Diploma in Laboratory Technology (CPIT, 1996), PhD Molecular Genetics (LU 2002).

Rachel was born and raised in Marton, a small rural town in the Rangitikei district of New Zealand. On her father's side she is of Ngati Maniapoto decent, while her mother's side has strong European roots. Rachel's original research focused on animal health, specifically the ability of new born lambs to survive cold weather, however over the last decade it has broadened into human and community health.

Patu Aotearoa (Patu) is a social enterprise that is dedicated to the holistic health and wellbeing of local communities. Patu runs culturally-centred gyms nationwide which combine group exercise and healthy lifestyle education with te reo me ōna tikanga Māori (Māori language and culture). In the Hawke's Bay, the regular weigh-in sessions for the Patu Hinu (fat) Wero (challenge) have been used as a vehicle to engage both Patu members and their pets (the furry whanau) in health checks. The Patu health checks have provided a wealth of research data and an opportunity for the Nursing, Recreation and Sport, and Veterinary Nursing students to practice their practical skills, engage with the local community and assist in the collection of research data. Research has been an important aspect of Patu's growth, both measuring outcomes and helping to inform Patu staff about how to best serve their community's needs.

Wash v. Waste**Joany Grima**

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Joany Grima has designed and delivered event management courses at WelTec since 2010. Parallel to working in academia, Joany works as an international events manager. She has staged events in the tertiary, arts, government and not-for-profit sectors in seven countries on five continents.

Waste minimisation practices at New Zealand festivals are unregulated, and local authority guidance in regard to waste minimisation varies. Despite the absence of regulation, some festivals are choosing to incorporate waste minimisation practices into their operations. This study investigates the primary barriers associated with minimising festival waste, and explores solutions to overcome them. Semi-structured, face to face interviews with 16 festival organisers representing 14 festivals were undertaken, in order to analyse the inclusion of waste minimisation practices in their operations, and to determine perceptions of both facilitators and barriers toward influencing and implementing such practices. Dominant barriers related to waste management service providers, volunteers, the time and resources required to implement a waste minimisation system, specialist knowledge about packaging, regional recycling capacity, and local authorities. The study found that many of the barriers and challenges identified are aligned with the advocated model of minimising festival waste in New Zealand. There is scope to urgently re-think this model, the effectiveness of which has deteriorated in light of the global recycling crisis. While there is no 'one size fits all' solution to minimising festival waste, focusing less on recyclables, and more on edibles, reusables, and compostables could not only reduce waste, but also reduce the necessary infrastructure on festival sites. A revised model could facilitate a decrease in the obstacles relating to waste minimisation found in this study.

Impacts of prior educational achievement and socio-economic factors on student success – a sector comparison of ‘distance travelled’

Dr Alison Harrison

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Alison has held the position of Executive Director, Strategy at Open Polytechnic since 2009. She previously worked as a management consultant in Europe for 10 years leading change management and strategic and business improvement projects across a wide range of organisations and sectors. Alison has 25 years of experience in the tertiary education system, including roles in applied research and the commercialisation of research technologies. Alison holds a PhD in Chemical Engineering from the University of Natal in South Africa and an MBA (with distinction) from the University of Oxford in the UK.

This research, undertaken by Business Economic Research Limited (BERL) in collaboration with us, seeks to investigate the relationship between course completion rates in tertiary provision and the student profile with respect to prior educational achievement and socio-economic / socio-demographic factors. The research draws data from various government sources such as Education Counts and Integrated Data Infrastructure (IDI) to identify the ‘starting point’ of students in each sector and the impact of this starting point on success. It goes on to measure ‘distance travelled’ as a result of study, which considers a combination of subsequent employment, earnings and benefits received. This research seeks to challenge conventional measures of the value of government investment (such as course completion and qualification completion rates). It argues for fairer and more meaningful measures that better reflect the contribution of ITP provision to the student communities we serve.

You can't just go around saying 'kia ora' all over the place: Kia Angitu Māori student success

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Dr Anne Hiha researches in the field of Māori potential in Education, Health and Communities.

Deb Stewart is a Teacher Development Advisor in Te Papa Ako, the EIT Education Development Centre.

Margaret Young is a Kaiwhakaako in Te Ūranga Waka EIT, teaching Certificate Level 2 reo Māori.

Successful outcomes for Māori students remain a priority for tertiary educators in Aotearoa New Zealand. We prioritised raising te ao Māori knowledge and skill levels amongst its staff. Kia Angitu Māori Success at our Research Project grew out of the desire to embed the new knowledge and skills into teaching practice. Kia Angitu is a 19-month project with two distinct phases in 2018 and 2019. This presentation will focus on phase 2018. Kia Angitu 2018 focused on the strategies that assisted teaching staff at to successfully engage with Māori learners and enhance Māori learning outcomes. It brought together a community of teaching staff, to explore successful ways of engaging Māori learners and implement strategies and initiatives into their practice. The project used action research methodology informed by a number of key principles of kaupapa Māori. In this presentation we will share an overview of the research project and the findings for phase 2018 and introduce Kia Angitu 2019. The results of Kia Angitu 2018 showed that with a willing heart and the support of a strong community any academic can use their knowledge of te ao Māori limited or vast to successfully engage with Māori learners and enhance Māori learning outcomes.

Inspiring students: A story of Inquiry-Based learning in Kawerau**Nicholas Hoete and Kate Shanaghan**

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Nicholas Hoete (Te Patuwai, Ngati Takahanga, Pirirakau) is a proud father of four from Motiti Island. He grew up in Kawerau and has had a varied career which today informs his teaching practice. Following on from an apprenticeship in heavy engineering, Nick continued further academic studies in the UK, and in 1995 was part of the Thrust SSC project run by Sir Richard Noble in the USA that went on to break the World Landspeed record (1997). Nick enjoys involvement with projects that range from Māori learner support in the workplace, to cultural responsiveness strategies. He is privileged to have the opportunity to make a difference to the lives of people in the Kawerau community and help them realise their potential. Nick's whanau is actively engaged in the historic return of the Wharenui Hinemihi o te Ao Tawhito from the UK.

Kate Shanaghan is the PBRF and Special Projects Leader at Toi Ohomai Institute of Technology. She has enjoyed her role within this project and witnessing the change that has occurred for the students involved. Kate currently lives in Rotorua and enjoys the outdoors.

Our organisational values and strategic direction emphasise our commitment to regional communities, especially those with little previous access to higher education, and learners who may struggle to engage with teaching and learning in general. This presentation outlines the delivery, and evaluation of an innovative re-working of the New Zealand Certificate in Study and Career Preparation (Level 3), designed specifically around the needs and aspirations of the Kawerau community. With a large Māori community from rural and semi-rural backgrounds, it made sense to ensure that the programme and delivery aligned with a respectful partnership approach: allowing the students to bring their true selves: their local knowledge, cultural identity, and unique experiences to the classroom in a meaningful way.

To capture the triumph these students felt, and their inspiring stories of personal transformation, the research team created a video record of the group project, from inception to graduation, which we would love to share with colleagues. We would also like to offer suggestions of transferable strategies for similar student cohorts, and outline the next steps in this journey.

Learning, becoming, being: The journey from student teacher to full teacher registration**Tracey Hooker, Simon Archard and Lynley Westerbeke**

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Tracey, Simon and Lynley are Lecturers on the Bachelor of Teaching (ECE) at Wintec. All have worked in the ECE sector as qualified ECE Teachers. All three are active researchers with a wide range of ECE focused interests including disability in early childhood, digital technologies, belonging and initial teacher education.

This research aims to investigate the journey of student teachers as they complete their programme of study and begin their careers in the teaching profession. There is little documented evidence of what, if any, impact an initial teacher education programme can have on teachers as they move through the profession – from student to newly qualified teacher to fully certificated teacher. This project will explore this relationship and how graduates call on the knowledge acquired in their initial teacher education qualification to inform their practice as teachers. The Teaching Council of Aotearoa New Zealand is currently undertaking a project examining Future Focussed Initial Teacher Education this project will complement this work as well as the Ministry of Education's Draft Strategic Plan for Early Learning. The aims of both of these pieces of work are to provide quality learning outcomes for all children and effective teaching strategies. This project will explore these aims and the relationship between an initial teacher education programme.

The research is a longitudinal study with three phases. The first phase investigated graduates perceptions of preparedness to teach and as they enter the workforce how their field-based initial teacher education training has contributed to this. The next two phases will follow the newly qualified teachers as they transverse the induction and mentoring towards full certification. In these two phases of this research the participants will become teacher researchers.

This presentation reports on the findings of the first phase which included a survey and semi-structured interviews.

Listening to the birds in the Waikato**Dr. Tim Hunt**

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I currently lecture in the areas of Management Support Systems and Management of Information Systems in the Centre for Information Technology at Wintec. My current research interest is developing Android software for The Cacophony Project (cacophony.org.nz) to record birdsong.

The Cacophony Project aims to greatly improve the ability to eliminate pest predators through out New Zealand and monitor the effects on bird life that this brings. My involvement with the project through my research, is to help assess the effects that this pest control has, by collecting information about the changing quantity and type of bird species in these locations. We are currently building a technology infrastructure which will enable the automatic, ongoing recording and analysis from thousands of locations across New Zealand. The ability of mobile phones to make audio recordings and upload them to the internet combined with their low cost and availability were the reasons for choosing to use them as the basis for the recorder. Recordings are automatically uploaded to our computer server using wifi/mobile data or manual transfer from the phones memory card if neither are available.

Our aim is to apply artificial intelligence to transform these recordings into useful information. To help do this we first need to gather many examples of bird calls that have been correctly identified. With the help and support of the Hamilton City Council and the Waipa District Council, we are currently monitoring two locations in the Waikato, one of which is near one of the high points in Sanctuary Mountain Maungatautari, inside a pest proof enclosure. These recorders are demonstrating that the technology can perform consistently in a remote locations using solar power and mobile internet. Secondly the bird calls that are recorded can be used to train our software – we can't do that if we don't have examples of the calls. We are now establishing a historic record of bird song at these locations that future researchers will be able to use to establish trends in bird life.

Research into the Largest Campylobacter Waterborne Outbreak Ever Recorded: The Havelock North Campylobacter Outbreak Research Programme

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Dr Anita Jagroop-Dearing is a Senior Academic in the School of Health & Sport Science, EIT. Anita has more than 20 years' experience in the field of vascular disease at the major teaching hospital, University College London (UK). She has published extensively with more than 74 PubMed entries / H-index of 22.

Safe drinking water is crucial to public health. But, in August 2016, some 5,500 of Havelock North's 14,000 residents became infected with Campylobacter due to contamination of their drinking water supplied by two bores. This is likely to be the largest Campylobacter outbreak from a single source ever reported and the largest ever waterborne outbreak in New Zealand. This outbreak of gastroenteritis shook the public confidence as some 45 people were hospitalised, with a possible 3 deaths, and at present an unknown number of elderly residents who continue to suffer from health complications.

Preliminary investigations were conducted and reported to the Government Inquiry into the Havelock North Campylobacter outbreak. However, there is considerable potential for further data analysis to gain the full benefit of collected data. A research programme funded by the Health Research Council to the sum of \$437,949 is currently being undertaken to provide an in-depth analysis of the outbreak. This research brings together experts from across the health and academic sectors in New Zealand to cover different aspects of the Campylobacter outbreak, including Hawke's Bay District Health Board, University of Otago, Institute of Environmental Science and Research, and Massey University.

The 'Havelock North Campylobacter Outbreak (HNCO)' research programme includes an assessment of the outbreak and the public health sector's response to it; community prevalence and incidence of reactive arthritis following the Campylobacter outbreak; long term health impacts like renal and other complications among persons hospitalized with Campylobacteriosis; functional decline among aged residential care facility residents following Campylobacter infection; rainfall and historic Campylobacter incidence; and an exploration of non-traditional early warning detection tools like social media feeds that could have potentially helped public health professionals identify the outbreak sooner. This presentation will provide further insight into the above HNCO research programme currently being undertaken.

Sustainability oriented innovation in Management: A conceptual Framework**Dr. Shilpa Jain, Dr. Vipul Jain**

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Dr. Shilpa Jain is a lecturer in Management & Economics, Learning Delivery at Open Polytechnic, Lower Hutt. She holds a Ph.D and Masters degree in Business Management (OB/HRM) from India. She was also awarded a Diploma in French language by Ministry of National Education, French Republic.

She has substantial teaching experience having taught courses in the areas of in Business Management, Organisational Behaviour and HRM to both Master's and undergraduate students at Murdoch University, Dubai campus, TERI School of Advanced Studies, New Delhi, India, BIMTECH, India. She was also a tutor at School of Management, Victoria University of Wellington. She also has substantial peer-reviewed research publications to her credit. Her research interests are in the areas of Workplace Stress and Job Burnout, Work Teams, Strategic Human Resource Management, Business Sustainability.

With mounting climate change issues, environmental degradation, ecological imbalances, depletion of resources, unbalanced socio-economic development, health and safety mishaps, exploitation of human resources, and so on, sustainability and sustainable development are the need of the hour.

Businesses have an important role to play in advancing the sustainability agenda. However, the challenges of integrating sustainability into a profit-oriented business model are immense. Yet it is important to recognize that sustainability and performance are not trade-offs- that one cannot be achieved along with the other. Through innovative mind-set, it is possible to transcend this either-or thinking and in fact make innovations that are not only consumer focussed and performance-oriented but sustainable as well in the long run. Sustainability oriented innovations are new or enhanced products, services or processes that reduce the negative environmental and social impact while steadily increasing the success of the company. (Schaltegger & Wagner, 2008, 2010; Wüstenhagen et al. 2008). Thus, sustainability oriented innovations have an important role to play in integrating sustainability into the core of a corporation's value creation activities and embed it in products and services.

Advancing the agenda for sustainability oriented innovations is easier said than done. It involves management of diverse and often conflicting perspectives-economic, environmental, social; also consideration of the entire value chain in product life cycle implies balancing diverse range of stakeholders, and further attention to market viability of sustainability innovations. This signals the key role of leadership in advancing sustainability-oriented innovations. Unlike the other researchers, this research develops a novel conceptual framework, which examines the key competencies of a Strategic leader that build a link between innovation and sustainability. The efficacy and intricacy of the developed research framework will be validated in a real life case study.

What do you want to be when you grow up?**Mawera Karetai**

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Mawera Karetai, (Kai Tahu, Kati Mamoe, Rapuwai, Waitaha) is a Whakatane-based facilitator and DProfPrac learner in Otago Polytechnic's Capable NZ School. With a background in business, environmental and sociocultural disciplines, Mawera brings a wide perspective to problem solving and social change.

If no one ever asks you what you want to be when you grow up, then how will you learn to think about the future, and can choice really become a reality in your life? We live in a land that is largely regarded as free. We are free to speak our minds, free to learn, free to choose what we do for work, free to live where and how we want to, free to come and go as we please. But is that choice real for everyone?

How real is that freedom if we are never given the chance to learn to choose. Choice is a complex process that we develop over time and is heavily influenced by our social learning. From when we are small and our knowledge of life and living forms and expands, so too does our sense of where we stand in the bigger picture.

When our teens arrive in high school, who they are in their own minds is already established. Their ability to consider the future and their place in it is also established. If there has never been an opportunity for a young person to develop the skills required to see a positive future for themselves, and if that skill is not cultivated over the course of their schooling, then we can end up with young people who not only have no idea for a future, but also no ability to imagine one.

To solve this problem there is a simple question we should be asking all of our tamariki: What do you want to be when you grow up?

An exemplar pedagogy of community based research and learning**Tuhakia Keepa and Parekura Rohe-Belmont**

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Tūhākia Keepa is Poutāhū (Executive Director of Māori) at EIT. As a father, he is an exponent of mau rākau, wero and haka and a long time performer with the kapa Waihirere.

Parekura Rohe-Belmont is a kaiwhakaako for Te Uranga Waka at EIT, Taradale. A mother of one, a writer of over 50 songs, a performer with over 30 years experience, she is now tutor and lead of the newly founded Matangirau kapa haka of Wairoa.

Kapa Haka is one of the most visible forms of Māori cultural expression – based totally on research pertaining to particular communities of interest and community-based learning. This year, Wellington will host the premier kapa haka event - Te Matatini ki te Ao - which will see more than thirty-five thousand spectators, performers and supporters come together to participate in the experience. As a pedagogy, Kapa Haka is dynamic and utilises a variety of teaching methods including group work, individual learning and communities of learning. But Kapa haka demands more than simple learning – it's teachers drive for competency and mastery and its examiners have the highest of standards.

This presentation will have three sections. The first will discuss the pedagogy of Kapa Haka, what it is, what teaching techniques are utilised and how its proponents build their community. The second will include a personal account of from a composer of Kapa Haka items, performer and tutor and how performance personifies the community. The workshop will conclude with a short Kapa Haka performance.

Cognitive Education Framework for Cyber Security Education (CEF-CSE): A Collaborative Community Approach Aligning to the Tenets of Ako

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Prashant Khanna is a Senior tutor at Wintec. An ex-Colonel from the Indian Army, he currently teaches subjects in Cyber Security, Big Data and Research in IT. He is actively working on evolving new and innovative methods of teaching IT subjects at a tertiary level using a community learning approach.

Cognitive education is based on the studies of the mind and brain focusing on acquiring, developing and applying cognitive processes to realize qualified learning. It hinges on experience of the learner, and the tutor, about the specific subject being learnt, knowledge of the academic environmental restrictions, provision of peer and tutor support and the inherent drive of the tertiary learner to acquire and assimilate knowledge based on his or her specific needs. These tenets of effective learning align perfectly with the principles of Ako, a Māori concept implying simultaneous learning and teaching. Cognitive education is a recognized blended, inter-disciplinary approach to education and the present research picks upon its core principles while developing a methodology for teaching Cyber Security to tertiary level students. The methodology also aims at enhancing authentic learning through promoting the use of open-ended enquiry, thinking skills and metacognition in adopting a personalized, scenario based approach to learn. The present approach relates to the tenets of Ako, and in specific on tuakana teina, mahi-tahi and Whakawhanaungatanga. The objective in cyber security education is to impart students with life skills in combating cyber hygiene concerns, learning defensive and offensive techniques to combat internal and external threats to cyber environments, and appreciating risk emanating from increased exposure to cyber assets. The research bases its recommendations on the analysis of 18 months of student and peer feedback and review of results of students at graduate and post graduate level at Wintec. The initial observations in the research help identify voids in “affects” factor of student learning, while proposing group-work and continuance of personalized scenario based learning as a recommended approach. It also adopts the use of social platforms to assess/engage millennial students and recommending work integrated learning and inquiry based learning concepts in teaching cyber security concepts.

Creation of an Employability Centre, a behavioural change process

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Andy Kilsby is Director Employability at Otago Polytechnic. His responsibilities include the development of EduBits, Otago Polytechnic's micro-credentialling service, Learner Capability, and Otago Secondary Tertiary College.

Prior to joining Otago Polytechnic, Andy led the Malcam Charitable Trust, a nationally recognised provider of youth development services. He also enjoyed a 17 year management career in the finance sector. He has extensive governance experience in secondary education, the NGO sector and community development organisations.

In 2018, we created an employability centre and Directorate. Its goal is to create initiatives that support us to produce New Zealand's most employable graduates.

Our Learner Capability initiative seeks to develop tools that enable learners to gather evidence of individual capability, have that evidence assessed and verified, and then presented in a capability profile.

In this conference presentation, we will be concentrating on how we are attempting to build on our community of learners, educators and employers. To date, we have created a baseplate framework of 24 capabilities, piloted implementation with selected programmes, and with partner secondary and primary schools. We have also created an online tool for learners to gather evidence for validation and create a profile for employers. In our implementation programme, we have taken a behavioural change approach – to ensure learners can gather evidence of their capability through our learning experiences, we have required change in the way we deliver curriculum. This is requiring a new and innovative approach, flipping curriculum and placing learner experience at the heart of our design. In our presentation, we will reflect on our journey to date.

We will also be providing initial findings from our Learner Capability Research initiative, which has engaged over 162 employers and 50 staff members to date. In this Ako Aotearoa funded project, we are engaging with our community of employers, students, alumni and staff to investigate the capabilities required of employees, and the relationship between capability development and engagement in the workplace. We are developing innovative ways to engage teaching staff in research and in the engagement of stakeholders, and we will demonstrate these in our presentation by involving the audience. We are at an early stage in this programme, but have interesting insights to share.

Sustainable Urban Development: Implementation of Public Bike Sharing System - NZ Case Studies

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Dr Chan Kim is a lecturer at the Centre for Industry Design and Engineering (CEID) of the Wintec. He received his PhD from the University of Canterbury and M.Sc. from the University of Utah, U.S.A. His research interests are sustainable transport and modelling travel behaviour and have carried out many research and publication by using econometric methods.

Dr Maryam Moridnejad is a lecturer and programme coordinator for Civil engineering in the CEID, Wintec. Maryam completed her PhD from the University of Auckland.

This study describes research to improve understanding of sustainable urban transport planning from the perspective of the Central Business District (CBD) redevelopment process for two cities, Hamilton and Christchurch in New Zealand. The study was initiated with prioritising the type and location of the 'Public Bike Share Scheme' (PBSS) system to the existing CBD by attracting more visitors and patrons, which alters major and current urban transport issues. The literature review shows new aspects of the urban transportation network and explains the need for some changes in sustainable transport for liveable urban life. A major proportion of cities operated with PBSS system is the part of Europe territory, as the reason implies limited modal accessibility but higher population density in urban CBD. This scenario is somehow similar to NZ's two cities as the city's population is on the increase in proportion to the land size. Such studies, despite their importance, are relatively scarce due to issues related to data collection and confidentiality of personal information from taking part in such studies. This study uses the Multinomial Logistic Regression (MNL) modelling, which postulates that CBD patrons' travel behaviour depends on two components, some observable attributes such as walking distance and fares, and unobserved heterogeneity. The latter is taken into account by characteristics of respondents such as gender, income and use of mode to travel. The MNL model was used to calculate the base mode shares, and subsequently, to test various hypothetical policy options for promoting greater use of PBSS. The data were gathered using stated preference surveys from 486 New Zealander resided on two cities. The results of the modelling allow policymakers to design more appropriate strategies and policies for different segments of the population to improve an urban CBD. The modelling results also indicate that the potential improvement in a modal shift, which can be achieved by applying different policy options, varies with both walking distance, service fares and availability of new public transport service.

Te Wheke**Shirley Lyford**

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Lecturer at Toi Ohomai Intitute of Technology, Te Tohu Paetahi Tapuhi (Bachelor of Nursing). Current member of the NHC research group for Toitu te Ora aspect of Toitu te Kainga, Toitu te Ora, Toitu te Tangata research project.

Since the inception of Waiariki College's Diploma of Nursing (in 1984?), Te Wheke has been utilized as the primary health assessment model across all clinical papers. A recent collaborative research study in the National Science challenge offered an opportunity to use this same indigenous model of health as a research data collection and analysis framework for the Toitu te Ora aspect of the research. A focus of the study is to seek a holistic understanding of peoples health and wellbeing in relationship to housing, the environment and a rural reality. The framework aimed to provide the basis of the research, whilst ensuring enough scope to define whanau health beliefs and organically weave science through this self-identified ideology. Use of the model enables lectures to demonstrate the living application of the model in a health research context to our students.

Using Augmented Reality to support cross-curricular learning opportunities**Kathryn MacCallum**

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Kathryn MacCallum is an Associate Professor, senior lecturer and Programme Coordinator of the Postgraduate Programme within the School of Computing at Eastern Institute of Technology, NZ. Her teaching is underpinned by her research, which is driven by her passion to be a better teacher and develop effective teaching practices usually with the use of appropriate educational technology.

The Digital Technology/Hangarau Matikiho Curriculum (DT/HM) was incorporated into the Technology strand of the New Zealand Curriculum in 2017 and is due for full implementation by 2020. The MoE requires that all schools and kura upskill in digital technologies by 2020. As such, there is a critical need to support teachers in exploring new ways to embed digital skills and tools into the general curriculum in a holistic and authentic way. The new focus means that digital skills should no longer be considered as a separate activity, divorced from the general curriculum, but rather integrated into all aspects of the learning experience. Teachers will need to be able to design new learning experiences underpinned by digital tools, which support authentic and situational learning. This integration will also need to move away from students being consumers of their digital tools and applications but rather creators of their own artefacts and learning experiences and thereby making the learning more engaging and authentic.

This presentation will explore how digital tools, in particular, Augmented Reality can be used to support cross-curricular learning within schools. The presentation will outline how AR can be used in a variety of learning contexts to supporting subject specific learning outcomes as well as support the development of digital skills.

This presentation will introduce an emerging research project which is currently being set up with a number of secondary schools within the East Coast. This project is a collaborative, multi-discipline, cross-sector community of learning project focused on how we can better develop our student and teacher digital capabilities in a way that embraces digital tools as a bridge for a range of learning opportunities.

Fraud in New Zealand Schools**Louise MacKenzie**

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Having worked in the tertiary sector for a number of years, Louise is currently a senior lecturer with the School of Business at EIT. She has long held an interest in financial internal controls, particularly financial internal controls in a schools. This interest stems from her background in the corporate sector as an insolvency accountant, and subsequent early career in the secondary school sector.

This presentation is based on recent research findings stemming from the presenter's research that indicate financial internal control policies and procedures in Hawke's Bay secondary schools are not sufficient to effectively safeguard the schools' financial assets and resources.

The presentation will approach this serious matter in a light-hearted way by following the format of a short multi-choice pub quiz, where questions are written rather than oral. Participants will be given a sheet of questions relating to the two main topics of fraud in schools, and financial internal controls in schools. Multi-choice answers will be put up on the screen question by question. The presenter will be acting as a roving M.C. and, with a nod to the financial topic of the presentation, will give out chocolate coins as prizes to those participants who get correct answers. At the end of the process participants will have a better awareness of areas concerning secondary schools such as:

- The \$ level of fraud in NZ schools;
- the main perpetrators of fraud in schools;
- what the term financial internal controls means;
- what an internal control framework is;
- who has financial responsibility in schools;
- who comprises the senior management team in schools;
- whether or not schools are legally required to have an internal control framework;
- who has responsibility for establishing and maintaining a financial internal control framework for schools;
- which government department is currently not fulfilling its legislative requirements in relation to financial internal controls in schools.

Predictors of breastfeeding duration in a predominantly Māori population in New Zealand

Kathy Manhire

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I am a registered nurse and midwife with a masters in Midwifery and a deep abiding passion for whangai u /breastfeeding which never fades as we constantly face new challenges for women, pepi and whānau. I also have a deep abiding fashion for my children and new granddaughter Fern. I was born in Christchurch now live in Ahuriri. Have supported student learning in the Bachelor /masters Nursing at EIT for some years. Its been an honour to work on this project.

Although breastfeeding duration in New Zealand's indigenous Māori is shorter than in non-Māori, we know little about barriers or motivators of breastfeeding in this community. The aim of this analysis was to identify predictors for extended duration of breastfeeding amongst participants drawn from predominantly Māori communities in regional Hawke's Bay.

Mother/baby dyads were recruited from two midwifery practices serving predominantly Māori women in mostly deprived areas, for a randomised controlled trial comparing the risks and benefits of an indigenous sleeping device (wahakura) and a bassinet. Questionnaires were administered at baseline (pregnancy) and at one, three and six months postnatal. Several questions relating to breastfeeding and factors associated with breastfeeding were included. The data from both groups were pooled to examine predictors of breastfeeding duration.

Māori comprised 70.5% of the 197 participants recruited. The median time infants were fully breastfed was eight weeks and Māori women were more likely to breastfeed for a shorter duration than New Zealand European women with an odds-ratio (OR) of 0.45 (95% CI 0.24, 0.85). The key predictors for extended duration of breastfeeding were the strong support of the mother's partner (OR = 3.64, 95% CI 1.76, 7.55) or her mother for breastfeeding (OR = 2.47, 95% CI 1.27, 4.82), longer intended duration of maternal breastfeeding (OR = 1.02, 95% CI 1.00, 1.03) and being an older mother (OR = 1.07, 95% CI 1.02, 1.12). The key predictors for shorter duration of breastfeeding were pacifier use (OR = 0.28, 95% CI 0.17, 0.46), daily cigarette smoking (OR = 0.51, 95% CI 0.37, 0.69), alcohol use (OR = 0.54, 95% CI 0.31, 0.93) and living in a more deprived area (OR 0.40, 95% CI 0.22, 0.72).

Breastfeeding duration in this group of mainly Māori women was shorter than the national average. Increasing the duration of breastfeeding by these mothers could be further facilitated by ante and postnatal education involving their own mothers and their partners in the support of breastfeeding and by addressing pacifier use, smoking and alcohol use.

Te Raranga Whakapaepae o Te Reo**Nadine Mckinnon**

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McKinnon, a kaiwhakaako at Te Whatukura, Gisborne Māori is a teacher by trade, and a busy mother with three children. Needing a project to keep her mind active, she wrote two books to help high school students learn Te Reo. So far almost 10,000 copies are out there helping to revitalise Māori language. She is now lecturing degree students, and is working on a book on Māori grammar.

Learning Te Reo Māori is about 'weaving words together to create meaningful sentences' such that those who have embarked on the journey to learn te reo Māori can express their own thoughts and ideas. My approach to teaching focuses on a particular kaupapa which is 'that from the question comes the answer and therein lies the statement - the kōrero'.

Therefore, in my approach to teaching question particles in particular are examined, along with the base words (tumu) that substitute them to create the answer. The impact of the supporting words (punga), especially at the beginning of the sentence to change the meaning of the sentence is also examined.

This presentation covers my approach to reaching learners with simple and meaningful word exchanges and my creation of the book Te Raranga Whakapaepae o te Reo.

Student learning experiences as they interact with assessments**Dr. Maryam Mirzaei, Patrick Dodd, Dr Anne Yates, and Malama Saifoloi**

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Dr Maryam Mirzaei is Lecturer in operations management and Research Leader, and Patrick Dodd is a Marketing Lecturer and G54 Academic leader, and Malama Saifoloi is Senior Lecturer in operations management and Academic Leader at School of Applied Business at Unitec Institute of Technology. Dr Anne Yates is Senior Lecturer at School of Education – Victoria University of Wellington

In aligning learning and teaching outcomes with industry expectations educators have turned to real world and authentic contexts. An authentic assessment is one that replicates tasks and performances typically faced by professionals in the actual workplace. Accordingly, it improves the quality and depth of learning, autonomy, commitment, and motivation for learning. It also encourages metacognition and self-reflection and will enhance employability (Villarroel et al., 2017).

One characteristic of today's work environment is interdisciplinary collaboration. Our lecturers have been working closely with industry partners on shared projects that have real-world elements while also fulfilling the requirements of the respective assessments resulting in authentic learning events.

This research evaluates the effectiveness of such assessments. The methodology used is a case study and the case is an authentic assessment. The assessment under study is a cross-disciplinary collaboration initiated in the School of Applied Business to complement existing industry-based projects. In this approach, students from Project Management class (Consultants) were embedded into student teams (Clients) from multiple Schools to act as project "Consultants". The primary source of data was student interviews.

This research found that the 'Consultants' believed that the assessment activities and tasks were similar to what they would experience in the workplace. Likewise, the 'Clients' recognized the role of the 'Consultants' in enhancing their communication and time management. The 'Clients' also showed a newfound interest in project management tools and reporting systems. Some students from each group found working with other students across campus a great opportunity to expand their network, find new friends and become familiar with new subjects and concepts.

However, some 'Clients' were confused about the 'Consultants' role and expected the 'Consultants' to offer subject matter support or have direct input into their final reports in order for their role to be beneficial. There were also challenges in coordinating between the Project Management class and the 8 Client classes who participated in these exercises in terms of synchronizing assessment deadlines, organising meeting times and fostering mutual engagement. Overall, the 'Consultants' engaged most with this initiative while the 'Clients' did not find the exercise mutually beneficial. We have captured those challenges and revised the assessments to enhance coordination between the classes and enhance students experiences.

Ngātahi- working together in our community on research that matters

Kay Morris Matthews, David Tipene-Leach, Anne Hiha, Sally Abel, Pippa McKelvie-Sebileau, Charlotte Chisnell, Raema Merchant, Chris Malcolm, Tim Giles (EIT); Russell Wills & Bernice Gabriel (HBDHB)

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We are a multi-disciplinary research team across EIT (Indigenous and Māori health research; Social Work; Mental health) joined by our colleagues at the HBDHB (Paediatrics & Clinical Psychology)

The Ngātahi project in Hawke's Bay is designed to improve the skills of those who work with the most vulnerable children across the health, social services and education sectors and as a result, improve children's behaviour, health and learning outcomes. This three-year national pilot aims to enhance practitioners' core competencies in three areas prioritised by the workforce: Engaging Effectively with Māori; Mental Health & Addictions and Trauma-Informed Practice. Central to the philosophy of Ngātahi is intersectoral collaboration across 27 organisations and 500 staff who work with vulnerable children, adolescents and their families in the region.

We were commissioned by the Hawke's Bay District Health Board to evaluate Ngātahi. Together, we will present early findings; highlight our shared kaupapa for the project, outline the cultural frameworks as well as our bottom-up approach, informed by Collective Impact and Appreciative Inquiry.

**Learning to Teach in Innovative Learning Environments on Practicum:
Affective, Embodied, Collaborative Practice**

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Dr Emily Nelson and Leigh Johnson work as teacher educators on EIT's Bachelor of Teaching (Primary) degree. Both Emily and Leigh are passionate educators with an interest in contemporary issues in education, including technology-integrated learning and the emergence of innovative learning environments. Their shared research interest in innovative learning environments and the implications of these for preservice education has resulted in a number of publications and presentations in this field.

The purpose of this research is to gain a better understanding of how preservice teachers learn to teach effectively in Innovative Learning Environments (ILEs) on practicum. These learning contexts are becoming more common in New Zealand schools, and more particularly, in our EIT partnership schools. Research on preservice teachers' experiences of practicum within ILEs is sparse but necessary as the uptake of these environments in the primary education sector is happening at pace. In our practice-based teacher education programme we partner with 30 schools on an ongoing weekly basis to deliver an innovative teaching degree and many more practicum schools in our geographical area. ILEs are emerging in these schools as bespoke; the ways in which they enable collaborative teaching and learning, flexibility of spatial design and personalised learning for children vary considerably. However, ILEs exist alongside a predominance of traditional classrooms and teaching and learning arrangements. This creates a challenge for preservice teachers, teacher educators and school-based supervising teachers in supporting preservice teachers' learning in these settings for practicum. This challenge is amplified when we consider that practicum is a high-stakes assessment event.

Engaging with preservice teachers' perspectives on the experience of ILEs is vital to informing teacher educators' understanding around supporting student success and more broadly, to creating space in our partnership network for our students' perspectives to inform our collective practice. In our presentation we will present findings drawn from two recent focus group interviews with final year preservice teachers, exploring, from their perspective, how they learnt to teach successfully in ILEs on practicum. We utilised a post constructivist theoretical frame to enable us to attend to the embodied and affective learning that participants report. Post constructivism incorporates but extends thinking about learning beyond cognitive perspectives to include learning as affective and embodied. We will focus our presentation on two themes: the affective experience of learning to teach on practicum in ILEs, and implications of ILE practice for beginning teacher identity. We will conclude by considering what our emergent findings suggest for partnership-based teacher education that fosters preservice teacher success in partnership in the mixed traditional and ILE education context.

The impact of the zero-fee policy - benefiting local communities by widening access to tertiary education?**Pii-Tuulia Nikula**

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Dr Pii-Tuulia Nikula is a senior lecturer at the Eastern Institute of Technology. One of Pii-Tuulia's key research areas focuses on student funding and educational equality within tertiary education and pertinent policy frameworks. In her PhD research at the University of Auckland, Pii-Tuulia examined the historical development of tuition fee and other student funding policies in New Zealand and Finland.

New Zealand witnessed a radical change in its student funding policy approach in 2018. The new Labour led government decided to waive the cost of tuition for all domestic first year students without prior tertiary level study experience. This interactive session engages the audience in a small group discussion of the outcomes of this zero-fee policy. Both lived experiences and ideas about potential future consequences are welcomed. Is this policy likely to benefit local communities by widening access to people who have traditionally decided to opt-out of tertiary education? Are there any potential negative consequences? The ideas presented by the audience are reflected on in the context of a survey conducted among the first cohort of zero-fee students and other relevant literature.

Tussock Butterfly Project**Gavin O'Brien and Hannah Joynt**

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Gavin O'Brien is a senior lecturer at Otago Polytechnic College of Art, Design and Architecture. He holds graduate degrees in Art, Architecture, and Applied Science and has worked in fields of architecture, education and research as well as exhibiting as an artist/designer where his work explores the common turf between art and design.

Hannah Joynt is a contemporary artist and lecturer at Otago Polytechnic College of Art, Design and Architecture since 2007. Her individual studio based art practice is focused around engaging with the landscape and environment through drawing. She works collaboratively on creative projects that extend her practice into new territories and communities of practice.

The Tussock butterfly project is a product based enterprise of plywood butterflies based on Enid Hunter's 1970 competition winning design of the New Zealand two cent postage stamp featuring a highly stylised depiction of the Tussock Butterfly, a species endemic to the Eastern regions of the South Island.

Hunter's design is one in a set of three which also include the one cent Red Admiral Butterfly and the half cent Glade Copper Butterfly.

The project is the result of a collaboration with New Zealand Post, and Ahi Pepe | MothNet, a citizen science project run by Manaaki Whenua | Landcare Research that aims to engage teachers, students and whānau with moths, and through moths with nature and science. Ahi I Pepe Mothnet has a strong Te Reo Māori focus as very few science resources are written in Māori and take a Māori world view. The team is currently creating Māori names for moth species which until now have had names chosen by European taxonomists.

Our project also seeks to celebrate and contribute to New Zealand design and to link design research and education with tangible community based outputs. Materials used for the project have been carefully chosen on the basis of their credentials with respect to sustainability while the chosen subject is one that many New Zealanders still feel familiar with almost half a century after it began to repeatedly appear in their everyday lives.

10% of the sale price of each individual artefact is donated to support this work.

**A cognitive-affective approach for the development of academic literacy skills
in international students****Barnaby Pace and Samira Kakh**

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Barnaby Pace: <https://orcid.org/0000-0002-7611-646X>Samira Kakh: <https://orcid.org/0000-0003-0803-8989>*Barnaby Pace is the Head of Department – Postgraduate and Research**Samira Kakh is a Senior Lecturer teaching on the Postgraduate Diploma in Applied Management and Master of Applied Management programmes*

The economic impact of international education has always been an underlying motivation for Anglo-western countries to establish onshore international campus. Onshore activities are designed to fulfil the expectations of international students and encourage growth in the number of them on one hand and stimulate the development and delivery of sustainable world-class education on the other hand. Within this new realm, students are required to actively engage in intense multi-dimensional socio-cognitive activities such as reading, synthesising information, and developing arguments. The need analysis of international students who come from non-English speaking countries has developed a range of diagnostic tests and academic support programmes to accelerate the process of acculturation of students to their new academic life. This paper is an attempt to conceptualise the mechanism of commencing into an Anglophone tertiary setting and the development of learners' academic literacy skills in light of a cognitive-affective approach to teaching and learning.

Keep saying hello

Mandy Pentecost

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Mandy's background is in community development and counselling. She is a lecturer and manager at EIT, where she has worked since its Community College days, teaching on programmes from Level 3 to postgraduate. She enjoys marrying her passion for poetry with her research.

Alzheimer's disease is often characterised as "a long goodbye" as the person it affects becoming more and more "not themselves". It ranks alongside death in surveys of what people most fear. In an autoethnographic study of the ways Alzheimer's shapes relationships, and in particular how it shaped my own relationship with my mother, I used various forms of writing as the methods of inquiry. Poetic writing was interspersed with a discourse analysis of representations of Alzheimer's in popular culture. Following practices of Narrative Therapy for maintaining relationship with those who are no longer here, my interest was to keep "saying hello" to Mum as Alzheimer's changed what was possible between us. I use the small collection of poems produced for this research to speak into public conversations about Alzheimer's, to stand alongside and disturb the notion of the long goodbye.

Transforming the “sage on the stage”: a student-centred approach to learning mathematics**Sunitha Prabhu, Ken Louie**

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Sunitha has over 20 years' experience teaching Information Technology in New Zealand. She is currently a Senior Academic Staff Member in the Centre for Information Technology (CFIT) at Waikato Institute of Technology (Wintec). Sunitha completed her Masters in Computing and Mathematical Sciences at Waikato University, a Bachelor of Engineering (Electronics) Degree at Marathwada University, India.

The transition from secondary to tertiary-level mathematics is perhaps the most difficult of all STEM (science, technology, engineering and mathematics) subjects for learners. A key reason for this is the phobia many learners have developed from their previous math-related courses. To allow learners to overcome their reservations and to facilitate a positive learning experience we have taken the approach of shared leadership between the learner and the facilitator. The aim is to acknowledge and actively include the diverse student population, diverse in terms of age, ethnicity, experience, and personal responsibilities, with their learning and hence successful completion of the course. This presentation will describe the implementation and preliminary findings of our efforts in using this shared leadership approach in two mathematics courses taken by prospective Engineering (Level 3 Certificate) and Information Technology (Level 6 Degree) students. This was done by shifting the emphasis from the teacher being the locus of knowledge and control in the classroom to giving learners the independence to choose how, when and where their learning will occur. Preliminary results suggest a small improvement in class performance but a high level of student satisfaction with this approach. With further refinement of this approach it is hoped to improve retention and completion rates for these courses.

Towards the enhancement of Flexible Assessments, an Ako-inspired teaching & learning approach

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Sunitha has over 20 years' experience teaching Information Technology in New Zealand. She is currently a Senior Academic Staff Member in the Centre for Information Technology (CFIT) at Waikato Institute of Technology (Wintec). Sunitha completed her Masters in Computing and Mathematical Sciences at Waikato University, a Bachelor of Engineering (Electronics) Degree at Marathwada University, India.

Arthur Valle is a Principal Academic Staff Member in the Centre for Information Technology (CFIT) at Wintec Institute of Technology, where he is also the IT Research Leader. Arthur has a PhD degree in Production and System Engineering from Pontifical Catholic University of Parana (PUCPR) in Brazil. As his thesis, he developed a method for applying Process Mining techniques in software process assessments.

With the way adult teaching and learning is changing, mainly due to diversity of student set, tertiary institutes are moving towards learner-centred approaches including comprehensive learning and flexible assessments. This presentation presents "Flexible Assessments", an approach inspired by Ako principles. Ako principles shift the emphasis from the teacher being the sole source of information to sharing ownership with the learner. We implemented Flexible Assessment in Semester 2 2018 on a trial basis. Flexible assessment gives learners the flexibility with the type of assessment (how), the timing of assessment (when), and the quantity of assessment (how much) they choose to attempt while ensuring that the assessment integrity is maintained and that the learning outcomes for the course are achieved. This presentation discusses the achievements of flexible supervised assessments from the learners' perspective and the tutors' perspective in the initial implementation. For instance, in addition to the fact that this occurrence achieved better results than the previous occurrences of the same course, it was found that students were more relaxed and hence more motivated to learn. Based on analysis of quantitative and qualitative feedback received, we outline some potential improvements that can be made to this approach. For example, provide more alternatives for assessment types (e.g. presentations) rather than having only the supervised assessments.

Opportunities and Serendipity. How one student's assignment may influence end of life health care for all New Zealanders**Sean R Thompson, Dr Ashok Parbhu, and Richard Sharp**

Whitireia NZ

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Sean Thompson is a third year tutor on the BHSc Paramedic degree programme at Whitireia Polytechnic and an Intensive Care Paramedic with Wellington Free Ambulance.

Paramedic degree students complete a "submission-ready journal article" as their final year three assessment. In 2015 "Understanding the Place of Advance Directives in Paramedic Pre-Hospital Care" was one such assignment. It identified the challenges faced by paramedics in applying a patient's advance directive - details of their end of life wishes - in the high stakes environment of a cardiac arrest.

Co-authored by student and tutor, the paper was published in 2016. During questions an audience member identified the possibility of a simple online system – an app – on which to complete advance directives.

Serendipity: One month later another institution advertised for proposals for computer engineering students to collaborate with industry partners on a project.

In 2017 the www.MySay.org.nz proof of concept was created by computer engineering students and the paramedic tutor. MySay is a web application where anyone can simply create an online advance directive. A QR code is generated and when scanned immediately informs paramedics and other health professionals of the patient's wishes when their heart has stopped or if they are nearing death.

IT Capstone project students and the paramedic tutor are now developing the app for mobile phones, surveying the perspectives of GPs, working with the Health Quality and Safety Commission, the Ministry of Health, Department of Internal Affairs, Capital and Coast DHB and Wellington Free Ambulance to take MySay towards a future clinical trial.

This project is evidence that student research - when supported by tutors and institutions (and serendipity!) - can evolve into greater opportunities than we might initially imagine.

Learners educational interaction with communities have proven to impact positively on local health care outcomes

Jean Ross

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Jean Ross is a registered nurse and holds the position of Associate Professor in the School of Nursing, Otago Polytechnic, Dunedin. Jean teaches in the Bachelor of Nursing, and is a research supervisor. Her teaching and research interests lie in rural health care, sustainability, community development, evidence-based practice and applied research.

As nurse educators our focus is to ensure nurse learners not only understand but are prepared to apply the principles of Primary Health Care in the community. For nurses to be effective in sustaining and improving a community's health it is imperative they practice within the principles of partnership with the community. The nurse's role in the promotion of health and the provision of acute, chronic and rehabilitative care enables communities to be as well as possible, use resources effectively and plan for future needs by working towards a sustainable model of care. In this paper I discuss the responsibility to ensure learners receive the best possible learning experiences. However difficulty in maintaining sufficient clinical placements for the learners' access, for example within General Practice; within Public Health; within District Nursing and within Plunket organisations was experienced. Clinical assess is a stipulated education requirement by Nursing Council of New Zealand (the regularity nursing body) as a component of the Bachelor of Nursing degree. Therefore it has been imperative we are able to offer clinical experience in the community. A solution focused approach evolved during 2015-2017 with the development of the Community Health Assessment Sustainable Education (CHASE) model to continue to provide clinical access while providing learners the opportunity to work with a 'community as their client' rather than the traditional mode where the individual is their client is discussed. Nurse learners develop a partnership with communities, identify health needs, with the purpose to improve the health status of the identified aggregate (population group/s) associated with the community with the aim of improving and sustaining the health of that community. Examples of solution focused interventions are presented highlighting the positive impact on community health and their sustainability.

'Re-building' family with clothes: an exploration of the value of second hand clothing for migrant seasonal workers in Aotearoa / New Zealand

Dr. Mandy Rudge

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Mandy is a senior lecturer and Programme Coordinator for the Te Hono ki Toi: Master of Professional Creative Practice programme, at EIT. Her research utilises Visual Anthropology and Design Thinking methodologies to investigate new visual approaches to ethnography and anthropological discourse. She has conducted an anthropology of anthropology and researched hapu identity, business signage and tourist photographic practices. Currently she is exploring the social life of clothing.

This presentation explores the experience of migrant workers who leave their communities in the Pacific to work in our communities in Aotearoa. The origins of this research lie in personal observations of Recognised Seasonal Employment Scheme (RSE) workers buying second-hand clothing in Hawke's Bay charity shops which then led to research into the wider context of the RSE scheme. Current research and media accounts tend to focus on how these migrant workers use their salary savings to 'build family' back home by constructing a new house or by developing a business when they return to their communities. While these developments are highly visible and highly valued, less obvious (and much less discussed) is the important role that second-hand clothing plays. Although the clothes they buy and take home for extended family are not as durable (or as costly) as larger scale developments, they perform a vital role in the 're-building' of family and community relationships when the worker returns home. This paper concludes with a discussion about the implications of this knowledge for the ways in which research is conducted.

Growing co-operation in the community: Whiria te tangata**Sue Scott-Chapman, Diana Kirton, Nikki Wawatai-Aldrich and Patrick Lander**

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Sue Scott-Chapman, PhD, BSpLS (Hons), Diana Kirton, PGDipHSc (CBT), BA, Nikki Wawatai-Aldrich, BSESci, CATA, NatCert Māori & Patrick Lander, PhD, MSc, BSc (Hons), CATA

Sue, Nikki, and Patrick all teach on the EIT Sport degree programme, Diana is practicum manager for the School of Health and Sport Science. Sue and Patrick co-ordinate the Whakawatea Industry Co-operative course and Nikki has secondary role as Māori mentor for the School of Health and Sport Science.

The aim of this presentation is to share the way in which a third year Bachelor course has helped us to grow co-operation in the community, and formed the basis for a whole new platform of community-centred engagement.

The Whakawatea; Industry Co-operative course is a compulsory, yearlong, capstone course which requires students to participate in a 150-hour work-integrated learning experience with an organisation of their choice. Over the last four years, the course has evolved in order to enable students to increase their level of ownership and engagement in meaningful projects within the community. This has enabled students to graduate with 'work-ready' skills and an ability to confidently share with future employers practical examples of a time when they succeeded, or failed, but more importantly made their own original contribution to an organisation or community.

The integration of community projects within student learning has helped develop opportunities for collaborative knowledge building and networking in groups which otherwise may not have seen the value in working together.

The valued relationships built with communities organisations have resulted in many student cohorts returning to year-on-year projects with supportive stakeholders. This experience has resulted in re-framing what students do within our entire Bachelor programme from 2019 by weaving the values embodied in a community-centred co-operative throughout our course offerings.

By recognising the shared values of relationships, genuine care and sharing of knowledge within our own community, the programme engages the concept of kaitiakitanga, through the kaupapa of Whakawhanaunga, Motuhenga, Manaaki and Matauranga.

Connecting communities through an industry-based course has created opportunities for community empowerment and collaboration which individual organisations couldn't have achieved alone. This mahi tahi approach continues to create a win-win-win situation for our all participants.

Whiria te tangata. Through weaving our values with those of others we weave a strong rope for all.

Environmental and sustainability education in initial teacher education**Rachel Speedy and Richard Edwards**

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Rachel is currently a student in the Bachelor of Teaching ECE programme. She has an interest in research and in environmental education which she pursued through a University of Waikato summer scholarship in 2018/2019.

Richard is a teacher educator at EIT with a background in science, technology, and environmental education research.

The workplace focus of ITPs means that research in which they are involved is frequently collaborative and involves a diverse mix of organisations. EIT's growing commitment to environmental sustainability led to EIT, the University of Waikato, and Cape to City (a programme managed by the Department of Conservation) developing a small scale research project within the University of Waikato's Summer Scholar programme to investigate the nature of environmental and sustainability education in initial teacher education. A second year student from EIT carried out the research which involved a review of the literature, development of a database of organisations and resources supporting ESE locally, and development of a survey of stakeholders for later use. The research highlighted the benefits of environmental education for children's learning generally and identified specific approaches, challenges and benefits in integrating outdoor environmental education into ITE programmes. This paper presents the outcomes of the study and explores how its outcomes may be used to support EIT's ITE programmes. It also describes the organisation of the project as an example of an ITP carrying out community-centred research aimed at producing tangible impact and benefits for its community. It highlights a number of features relevant to the success of this kind of research.

Building collaborative research networks to tackle asbestos waste with a circular economy approach**Gregor Steinhorn, Terri-Ann Berry and Shannon Wallis**

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Gregor Steinhorn is a biotechnologist, turned research manager. He builds research relationships between academics, students, industry and community organizations at Unitec. One of these exciting projects is the bioremediation of asbestos contaminated soil lead by Environmental Engineering Senior Lecturer Dr. Terri-Ann Berry and PhD candidate Shannon Wallis.

The move towards sustainability requires methods to reuse, refurbish and recycle resources in a circular economy system . While many materials, eg. metals, lend themselves well to a circular economy approach, others such as asbestos are inherently so dangerous that even low concentrations can turn materials from a resource into a hazardous waste. Asbestos contaminated soil is an overwhelming waste stream challenging today's disposal methods. Currently this hazardous material is sealed in plastic wraps or steel drums and buried in hazardous waste landfills. While this contains the danger for the time being, soil reuse is not possible and it will remain dangerous for millennia to come. These large legacies of industrial wastes are a tremendous burden for future circular systems. We have embarked on a journey to explore one possible solution for this problem. Certain fungi, lichen and microorganisms have been shown to degrade asbestos and could offer an option for bioremediation, making the contaminated soil safe again and returning it to the natural cycle. As promising as this is, research in this field is confronted with manifold obstacles. With a project, that deals with a carcinogenic material and time frames of decades to centuries setting up a research programme is not easy. We have spent several years building a network of researchers (in NZ and overseas), government bodies, local councils and the waste management industry to start on this ambitious research project. By building a complex network of collaborations and interactions, we have built the platform to now embark on this exciting, but also disquieting research endeavour. This new venture might provide insights into how to structure research collaborations for formidable problems and be of use for other researchers in the sustainability field.

Transportation habits of students: An assessment of carbon footprint**Kawtar Tani**

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Kawtar Tani is a Senior Lecturer and Programme Leader at the School of Business and ICT, UCOL

The aim of this study was to explore the transportation habits of students, and assess the transportation-related carbon footprint of the institution. Data about students' modes of travel to a tertiary education provider in New Zealand were collected in 2018 from 227 students enrolled. Green modes of travel included walking, and cycling, while non-green method was driving. Data collected also included distance from institution, age, gender, ethnicity, and enrolment type. Results showed that more students used a non-green method of travel, international students were more likely to choose a green mode of transport, and females were more likely to drive than were males. There was a significant difference between the working status of participants, and their mode of transportation, where non-green participants were more likely to be working, while green participants were more likely to be not working. Implications and limitations of this study are presented.

Whatu (to weave)**Raewyn Taura Paterson**

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I am a multimedia artist and curator who teaches at ideaschool, EIT and mentors our Māori students . The platform for my research is whanaungatanga, ecology and identity (Tuhoē and pakeha) with a focus on pattern in marae spaces. I have curated several community exhibitions, primarily to build whanaungatanga and Māori themes and community have become the heart of these shows.

Art communities are thriving, yet they operate very independently of each other. I wondered what exciting collaborations and connections could evolve if these artists were brought together. On this premise, I curated 3 community exhibitions in the welcoming space of the Hastings Community Art Centre to co-incide with Waitangi Day. Invitations have been non-heirarchical and organic. I was excited to see how an exhibition with diverse disciplines could create a space for like-minded artists to meet, share, connect and build new relationships (whanaungatanga).

The first exhibition in 2016 was formed around the concept of Tuakana/teina - an older sibling teaches a younger sibling, but the older sibling may also learn from the younger one. Artists from various Māori Art communities were invited, and bring a tuakana or teina to exhibit as well. In 2018 the theme was Wai-hanga-rua (Waitangi, recycling and wāhine). Degree and Master's students, graduates and tutors, were invited to exhibit along with local Toimairangi artists whose work explored these themes.

This year the show is titled Whatu (to weave) and is themed around textiles and identity. There are examples of traditional weaving, but the title is metaphorical; weaving people, weaving ideas, weaving materials, weaving new with old, weaving creativity. Textiles serve practical functions for clothing, vessels and coverings, yet they also express social status, gender and cultural identity. Local artists are exhibiting with guest textile artists from the Manawatu and Waikato.

I will present images of the amazing artworks from these exhibitions, along with korero from the exhibitors about whanaungatanga and knowledge they have gained, their experiences and their reflections.

Tautoko: How kaupapa Māori, social constructivist and mobile learning theories supported project-based learning initiatives

Cherie Te Rore

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Ko Ngati Pahauwera te iwi, ko Ngai Te Ao Kapiti te hapu.

I te taha o toku papa, Ko Ngapuhi te iwi, ko Ngati Tahawai te hapu.

Tokorua oku mokopuna ataahua – ko Manawa raua ko Mauri.

I am passionate about life-long learning that provides a foundation of respect for all.

The primary aim of this study was to help students develop skills in reading, writing, speaking, digital and critical literacy and conducting research. Two projects designed to nestle within the current mode of programme delivery of the NZ Certificate in Health and Wellbeing (Support Work) [Level 3], were run concurrently: The Taonga Tūroro Database Project:

1st: This project sought to incorporate digital tools to develop teamwork and written communication skills using a 'simulation' of online notetaking practices, and

2nd. The Photovoice Project: this project sought to identify issues of accessibility to support services.

The projects also provided an opportunity to integrate seven of the eighteen unit standards that comprise the programme.

The underpinning research imperative sought to illustrate how Kaupapa Māori and social constructivist and mobile learning theories facilitate deeper learning experiences by including the sociocultural contexts of students' lives and fostering collaborative engagement that includes the influence of digital modalities - how students' agency may be recognised to influence an enhanced learning experience in project-based endeavours.

Whakawhanaungatanga provided the starting point and platform for setting ground rules of respect and empathy as students brought aspects of their own lived experiences to life in photography and written and spoken narrative. All students identified whanau as motivation for their engagement in the programme. This commonality therefore of aroha and whanaungatanga provided the basis to embrace and integrate Māori cultural values and practices. Other values demonstrated included: tikanga in the respectful manner that they treated one another and responded to skills and values shared, tapu and noa in addressing privacy and dignity, manaakitanga in extending hospitality to manuhiri and mauri ora in seeking wellness for themselves as a successful outcome.

A further aim of this study was to provide models that may be easily adapted to other subjects and disciplines.

Te Kāhui Whetū | Capable Māori: a kaupapa Māori approach**Kelli Te Maihāroa and Māwera Karetai**

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Kelli Te Maihāroa (Waitaha, Ngāti Rārua Ātiawa) PhD candidate, MA, PGDipChIs, BEd, DipTchg. Kelli is the Tumuaki: Rakahau Māori | Director of Māori Research and Tumuaki: Te Kāhui Whetū | Director of Capable Māori at the Otago Polytechnic. Kelli was a co-editor with Professor John Synott and contributor towards Peacebuilding and the Rights of Indigenous Peoples: Experiences and Strategies for the 21st Century book. She has published on Māori education initiatives, cultural revitalisation and indigenous peace traditions. Kelli is the great granddaughter of the Māori prophet Te Maihāroa from Te Waipounamu.

Mawera Karetai, (Kai Tahu, Kati Mamoe, Rapuwai, Waitaha) is a Whakatane-based facilitator and DProfPrac learner in Otago Polytechnic's Capable NZ School. With a background in business, environmental and sociocultural disciplines, Mawera brings a wide perspective to problem solving and social change.

This paper provides an introduction to a suite of programmes offered by one of our Schools under the korowai of Te Kāhui Whetū |Capable Māori . Over twenty percent of their learners identify as Māori, which presents an opportunity to accelerate Māori learner success as Māori. Te Kāhui Whetū adopts a kaupapa Māori approach to support work based knowledge through preferred Māori learning styles and pedagogies. This paper outlines how Te Kāhui Whetū provides the kaupapa Māori 'for Māori by Māori' approach and reflects on Māori learner feedback sourced from the Kāi Tahu cohort Te Hōkai Nui in November 2018. This paper also offers first hand, the learning experience of the first Māori Doctoral student, who is also a facilitator. This presentation weaves together together the strategic, operational and learning experience of Te Kāhui Whetū: Mā te whirtahi, ka whakatutuki ai kā pūmanawa ā tākata | Together weaving the realisation of potential.

Reviewing and renewing cultural competence in the medical profession and a case study in mental health**David Tipene-Leach, Sally Abel, Anne Hiha, Kay Morris Matthews**

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Tipene-Leach is Professor of Māori and Indigenous Research at EIT. A public health physician, he presently has projects in infant health, mental health, archiving of historical material and post-Settlement history underway.

Cultural incompetence of health workers, alongside institutional racism, historical trauma and the maldistribution of the social determinants of health, is one of the prime causes of inequitable health outcomes for Māori. The Medical Council of New Zealand (MCNZ) and Te ORA (the Māori Medical Practitioners Association) are involved in a review and renewal of how medical practitioners learn about cultural competence, how their ability is assessed and how outputs are measured with the long term aim of cultural competence development contributing to equitable Māori health outcomes.

This presentation summarises the issues, presents the development of the MCNZ-Te ORA pathway to develop cultural competence and cultural safety and uses the evaluation of the Te Kūwatawata 'single point of entry' mental health programme in Gisborne and its Mahi a Atua 'way of working' in mental health care as a case study in this area of pursuit.

Drawdio: drawing and music in dual improvisation**Jane Venis and Hannah Joynt**

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Hannah Joynt is a contemporary drawing practitioner who works in a range of media, processes and scales. Visual interpretation of sound by drawing is recent avenue in her exploration of 'drawing as a language'. Professor Jane Venis is a musician, performance artist and maker of sculptural musical instruments. Her work is often playful and experimental and engagement with the viewer is critical to her practice. In 2018 they exhibited a performance video and performed live at Lines of thought an International contemporary drawing exhibition at CICA Museum in Seoul. 2019 upcoming events include acceptance into the Buinho Creative Residency in Portugal and Drawn to Sound solo exhibition and performance at Ashburton Art Gallery.

Our proposed presentation Drawdio takes the form of a live performance. In our ongoing performance research project we address the question "How do we collaborate successfully with two very different creative practices in order to explore new territories within a contemporary context?"

In real time, one of us plays a range of instruments in an improvisational way and the other responds to the music interpreting the sound as a large scale drawing. However, there is a moment at some point early in the performance when the musician starts to respond to the mark making, as the drawing has the ability to 'draw out' phrases from the instrument in 'dual improvisation'. Therefore each performance and the drawing made, is unique. Our collaboration is a process of continual exploration, thus we consider Donald Schön's concept of reflection in action as a useful catalyst to examine our active process. This concept is described by Schön (1983, p.68) who proposes 'When someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories or established theory and technique, but constructs a new theory of the unique case'.

We would like to perform our presentation in the gallery as part of the exhibition opening inviting the audience to experience how improvisation and spontaneous expression is common to both drawing and music. We will be happy to engage in discussion after our performance.

We are also proposing to exhibit a professionally filmed performance video work in the exhibition section and are submitting a separate proposal for this. Images from performances are emailed via PDF as instructed and includes a video link.

Understanding the experiences, perspectives and values of indigenous women around smoking cessation in pregnancy: Systematic review and thematic synthesis of qualitative studies

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Rachael Walker is both a Nurse Practitioner at Hawke's Bay District Health Board and Associate Professor at Eastern Institute of Technology, School of Nursing. Rachael finished her PhD in 2017 which focused on patient preferences for dialysis modalities. Rachael has continued with research in renal and is on a number of national and international boards including the NZ representative on ANZDATA, Nursing Representative on Australasian Kidney Trials Network, CARI guidelines Group and International Society of Nephrology Nursing Working Group.

The prevalence of smoking during pregnancy among indigenous women approaches 50% and is associated with sudden infant death, pregnancy loss, preterm delivery, low birth weight, and anatomical deformity. This study aims to synthesise qualitative studies by reporting experiences, perceptions, and values of smoking cessation among pregnant indigenous women to inform potential interventions.

A highly-sensitive search of MEDLINE, Embase, PsychINFO, and CINAHL, in conjunction with analysis of Google Scholar and reference lists of related studies was conducted in March 2018. We utilised two methods (thematic synthesis and an indigenous Māori analytical framework) in parallel to analyse data. Completeness of reporting in studies was evaluated using the Consolidated Criteria for Reporting Qualitative Studies (COREQ) framework.

We included seven studies from Australia and New Zealand involving 250 indigenous women. Three themes were identified. Realising well-being and creating agency included giving the best start to baby, pride in being a healthy mum, female role models, and family support. Understanding the drivers for smoking included the impact of stress and chaos that hindered prioritisation of self-care, the social acceptability of smoking, guilt and feeling judged, and inadequate information about the risks of smoking. Indigenous women strongly preferred culturally responsive approaches to smoking cessation, placing value on programs designed specifically for and by indigenous people, that were accessible, and provided an alternative to smoking.

Future interventions and smoking cessation programmes might be more effective and acceptable to indigenous women and families when they harness self-agency and the desire for a healthy baby, recognise the high value of indigenous peer involvement, and embed a social focus in place of smoking as a way to maintain community support and relationships. Development and evaluation of smoking cessation programs for pregnant indigenous women and families is warranted.

The Panama Papers - A Print Studio in Otepoti, Dunedin**Marion Wassenaar and Neil Emmerson**

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Neil Emmerson and Marion Wassenaar collaborate on Print Laboratory (P lab) projects under the pseudonyms of Bon a Tire and Emboss. They teach in the Print Studio at the Dunedin School of Art (DSA) and have recently shown the project "Panama Papers" with the News Network Group at c3 Gallery in Melbourne and the Forrester Gallery in Oamaru during 2018.

The Print Laboratory is an active, educational print studio. Their philosophy is to engage students in professional development through co-operation, collaboration in the community, workshops, custom printing projects and exhibitions. Their remote situation does not, however, mean isolation nor a lack of awareness concerning world events. This presentation considers the strategies employed to engage students in projects that strengthen and foster meaningful connections as active practitioners operating in the world. Their aim is to nurture an inclusive environment where students and staff work and learn together on projects within the print studio and in the wider community.

This paper with slide presentation reflects on the projects undertaken in the Print Laboratory and illustrates the benefits of print as a social collective. Through a wide range of projects students are offered the opportunity to engage in activities that complement the development of their individual practices in the Print Studio. Professional experiences related to the practical and conceptual skills involved in custom printing, collaboration, community projects, curatorial and publication skills, exhibition design and installation coupled with exposure to artists working with/alongside them in the studio workshops develop their understanding of a broad range of professional practices. We share with you a selection of the projects undertaken in the Print Laboratory. This includes student oriented projects and staff collaborations where students experience the unique culture and commitment associated with the Print Laboratory to engage in political dialogue through print as social practice and community projects.

Educational success of Wahine Māori social workers: contributing and impeding forces

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Moumoukai te maunga Waitirohia te awa Kahungunu te marae Ngati Rakaipaaka te iwi Ko Rehia Whaanga toku ingoa

I am a lecturer of social work at Eastern Institute of Technology based on the Tairāwhiti campus in Gisborne. I am currently enrolled in a Masters of Social Work through Massey University focussing on my Thesis. I practiced as a youth social worker in Gisborne before transitioning to social work education, of which I have been lecturing in Tairāwhiti for the past 8 years. I am passionate about the education of social workers and the success of Māori in tertiary education.

This paper examines the success stories of wahine Māori in social work education. What forces have contributed to or impeded their success? An initial library/IT-based literature search identified 80 literature within the last 20 years. Following two levels of screening 20 literature were selected as they directly dealt with the topic of my inquiry. A narrative review of literature was employed and a thematic analysis identified learning environments, course pedagogy and content, teaching and staffing, relationships between lecturers, peers and the wider institution, kaupapa Māori approaches and culturally safe learning environments as forces contributing to success. Deficit approaches, racism, course content and pedagogy, teaching and staffing, frameworks and policies which overlook the needs of Māori and socio-economic positioning are highlighted as forces impeding their success. These findings relate to the research symposium sub-themes - 'obligations' and 'relationships' as these are interlinked. Social work education providers (Universities, Polytechnics, Wānanga etc.) social work practitioners, professional bodies (SWRB, ANZASW) and policy makers have the obligation to respond to the contributing and impeding factors. This would mean facilitating and enhancing the contributing factors as well as removing the barriers that impede success of wahine Māori in social work education to support their aspirations and successful progression into the social work profession. Relationships and obligations serve to strengthen whanaungatanga however this is based on reciprocity and requires partnership and commitment.

The Piki Project**Paul Woodruffe**

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Paul has a Masters Degree in Landscape Architecture, and has a portfolio of public art and social enterprise projects, and is currently a Senior Lecturer in Design and Contemporary Arts at Unitec.

Paul is interested in the power of creative practice to build capability within marginalised communities.

How can the application of design thinking and technology empower a creative community that has lived experience of homelessness to become economically self-determining.

The Piki project is a partnership with Lifewise Trust, and is focused on building capabilities within the homeless community.

The project uses primarily creative practice to engage in capability building in technology, entrepreneurship, and to facilitate educational opportunities based within chosen activities. The methodology of this research project is sourced from Mātauranga Māori, and informed by a core group of individuals from the community involved with the research partners in all decision making processes.

The project is testing, measuring, and pushing the boundaries of existing practices so they can be adapted and expanded and be used to empower and build individual capability. One of the key components is the development of a brand that enables and supports the collective's social structure, and facilitates storytelling, this branding also providing a providence and authenticity for the community artists and their customers. Two parallel systems of engagement are used; Piki Toi for creative practice, and Piki for other avenues such as gardening and trade related activities. The project is supported by the design and functionality of a visual arts website, and an app. The app was designed through Datacom's "Datacomp" hackathon with guidance from representatives from the homeless community involved with the Piki project. The app enables those who do not have a creative practice, to achieve credits and recognition for skills learned while engaged in work or learning opportunities.

Key findings the project is seeking to produce are new ways to provide teaching and learning opportunities (and resources to support these), to a community that for a variety of complex reasons, are unable to engage with mainstream higher education.

Poster
Abstracts

Helping families to sleep their infant safely: What's going on during infant-adult bedsharing?

Sally Baddock

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Professor Sally Baddock has been an educator all her professional life and for over 30 years at Otago Polytechnic. Her research interest in infant sleep has led to research collaborations funded by the Health Research Council of NZ to investigate infant-adult bed-sharing, wakahura (flax bassinets) and Pēpi-pods (plastic in-bed bassinets).

The place baby sleeps is a fundamental choice in life and while it sounds simple the choice comes when parents are often uncertain and anxious, and advice can be contradictory. Many families bed-share for some time on a regular basis despite widespread advice not to bed-share particularly if the mother smoked in pregnancy, thus it is important to understand the potential risks and benefits to the infant. Aim: We systematically searched the literature related to adult-infant bed-sharing and infant physiology, with the aim of gaining a better understanding of the risks and benefits to the infant, with additional emphases on infant behaviour and breastfeeding outcomes. Methods: A comprehensive search strategy was developed. A primary search using words relating to adult-infant/baby bed-sharing/co-sleeping were combined with the terms physiology, sleep, cardiovascular, respiratory, temperature and behaviour. Seven key databases were searched until October 2017. Results: After scrutinising for inclusion criteria, 59 papers were included in the review. Physiological and behavioural differences between bedsharing and cot-sleeping infants were identified including warmer in-bed temperatures, increased waking and increased breastfeeding in bedshare infants as well as differences in infant overnight sleep patterns and cardiorespiratory control. Conclusion: Many differences are context specific - possibly influenced by cultural values and subjective views of parents. However, infants are at increased risk if unable to respond appropriately to their micro-environment, suggesting why bed sharing can increase risk in some situations. Results will help to inform public health messages about safe infant sleep and enable more informed discussions with parents.

Examining collaborative relationships between mentor teachers, degree students and the Bachelor of Teaching (Early Childhood Education) teaching team at EIT Te Aho Maui: Initial findings

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The EIT BTECE Teaching Team has extensive teaching experience (ECE, primary and tertiary). All active researchers, both individually and collaboratively, past research topics include student-centred learning, field-based teacher education, mentoring in ECE, attachment-based learning, Pikler and Reggio approaches and transitions.

A research project was conducted in 2018 to survey the experiences of Mentor Teachers in the delivery of the Bachelor of Teaching, Early Childhood Education. Data was generated through focus-group interviews and an online survey. The thematic analysis carried out by the BTECE teaching team is presented as initial findings. These findings are currently informing a finer-grained analysis using Harre and Langehove's (1999) 'positioning theory'.

**Men with cancer face inequitable choices with current fertility
cryopreservation services**

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I am an Andrologist specialising in spermatozoa cryopreservation, the only method that offers men with cancer some insurance against iatrogenic treatments. My most novel finding to date is that sperm cryopreservation coupled with a validated computer tool is highly predictive of mortality in men with cancer. This is a very important clinical finding, and has great potential as a technique to predict which patients warrant more aggressive anti-cancer treatments.

Semen cryopreservation is the only routinely available method for protecting the fertility of men for a growing number of clinical indications (Rozati, Handley, & Jayasena, 2017). However, there is only limited guidance concerning the quantity of sperm that should be stored for patients requiring the service. We have noted a large increase in Intra Cytoplasmic Sperm Injection treatment selection with cryopreserved semen for cancer patients who store at our clinic. The quantity of sperm being stored for assisted reproduction technologies may be a factor limiting treatment choice with cryopreserved semen. Frozen ampoules from 217 cancer patients were thawed and analysed for CASA motility using a validated CASA method. Cancer patient post-thaw quality was then compared with local minimum IUI semen threshold values calculated from 340 men who achieved a pregnancy with assisted conception. The number of IUI cycles for each cancer patient was then estimated from the calculated threshold values. ICSI is the evidence-based choice for post-thaw semen from most but not all cancer patients. A quarter of men with cancer who store a minimum of three ejaculates present with post-thaw quality that would allow a minimum of 12 IUI cycles.

Research for teachers: an example of ITP teacher education staff sharing their research with schools in the region

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Richard teaches in the Bachelor of Teaching Primary programme at EIT. He has taught in New Zealand and overseas and has worked with teachers in a range of settings. His research interests are in assessment, e-learning and teacher development, and in the curriculum areas of science, technology, and environmental education.

Staff teaching in degree programmes are expected to be engaged in research, particularly in research that informs their own teaching and the wider profession. However, the emphasis placed on publication means that the research is often published in academic journals that are not easily accessible to the teaching population. EIT staff teaching in two ITE degree programmes organise two sector specific annual research symposia aimed at staff in local schools and early childhood centres. This paper explores the organisation of one of the symposia and what contributes to its success. It also presents a survey of participant response, both audience and presenters, that indicates strong support for the symposium. The findings are discussed in light of recent international research into the value of research for teachers.

When caring too much is bad for people, business and community**Dr Lesley Gill & Marjolein (Marje) Schaddelee**

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Dr Lesley Gill is a Principal Lecturer, School of Business, Otago Polytechnic. Her teaching portfolio includes Leadership, HRM, Strategic Management and OB. Her research interests span emotional intelligence (EI), communities of practice, and research methods. Lesley delivers workshops in EI, resilience, self-awareness, empathy and others, is the author of many international peer-reviewed articles, and a textbook: Organisations and Management. Marjolein (Marje) Schaddelee, a Senior Lecturer at Otago Polytechnic, has research interests in organisational learning, human resources and organisational behaviour. These disciplines premise her most recent research, in empathy in the workplace, which focuses on helping people in the workplace demonstrate empathy and authenticity, and in their wider community.

Organisations that are service-focused do so much to strengthen our communities through their investment in customer experience and social investment. Whether it is a retail assistant, nurse, fire fighter, police officer, hospitality worker, or teacher, all of these roles, and many others, require workers to employ empathy in their role. Empathy can be perceived in two ways; affective and cognitive. Affective empathy describes the emotional response to a person's situation while cognitive empathy articulates the comprehension and acknowledgement at an intellectual level. The constant expenditure of affective empathy is emotionally draining, which has a negative effect on the wellbeing of the worker, the customer, the business and the community. We undertook a pilot study of five 'caring' industry managers and five employees to explore the impact of empathy expenditure when on the job, by undertaking interviews with them. Our findings showed that when workers 'drain their tank' of affective empathy, they either revert to using cognitive empathy, disengage completely with their customer, or allocate their limited empathic resources to their work, while these 'spent' workers' personal relationships suffer. The impact of these self-protecting strategies is that the customer misses out on the caring experience they are expecting, which in turn creates customer dis-satisfaction, damages personal and professional reputations and ultimately affects profits. The unseen cost is that communities suffer. The cost to business and communities in terms of staff wellbeing, lost income, customer relationships, and community impact is significant. What can we do to restore emotional energy, so that workers maintain the ability to be empathic, and customers feel listened to and supported? Managers' comments reflected the need for empathy in society today. "People are still going to need to interact in the workplace. There's going to be more pressure. There's already enough pressure on people to integrate work into life, and life into work". An employee explained their commitment as, "where you are giving, giving, giving so much in your role, that you get tapped out, and it takes its toll on you." Our findings prompted the following assumptions: Empathy Training is needed for managers and employees to better understand how empathy works. We need to learn protocols and processes to balance the inputs and outputs of empathy storage tanks. We need organisations and carers to establish boundaries so as to find the balance between caring too much and not caring enough. Effective use of empathy results in increased performance, increased well-being of workers, their families, their employers and our communities!

Structural Response of Multi-Storey Buildings under Deliberately Targeted Bomb Blast Loadings

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Tutor for Engineering

Deliberately targeted bomb explosions currently become common in many parts of the world. High occupancy iconic and public buildings are highly vulnerable to be such targets to claim maximum number of lives and extensive property damage. Direct blast pressure shock initially claims casualties and then building collapse further increase the total figure.

In New Zealand, buildings are designed and constructed to resist earthquake loadings. However, the risk of a building to an abnormal blast load cannot be eliminated under the current trend of global terrorism. Therefore, a potential structural analysis and design to blast loads is necessary for iconic buildings in addition to earthquake loads.

This study illustrates the methods that can be used for the analysis blast response of buildings. However, blast assessment of structures is complex as it involves an extensive range of parameters related to the blast loading and material behaviour under rapid strain rate. Blasts experiments involving explosives are complicated due to safety issues and the high risk associated with explosions. Therefore, computer modelling and analysis provide a feasible approach to identify structural responses subjected to random load environments. Available methods of computer modelling used for blast analysis are identified as coupled or uncoupled analysis systems. However, a simplified numerical approach employing uncoupled techniques is suitable for general analysis to determine structural response to blast loads. Material behaviour is significantly different under a rapid loading environment compared to static loading conditions. This is due to the materials inability to rapidly deform beyond the normal rate in static loading. This results in the stress level increasing at the yielding of the material and this must be included in blast analysis.

Overall, this study identifies suitable methods and necessary parameters for a structural analysis of a building under blast loads to provide required mitigation strategies.

How the use of boundary objects strengthen the initial teacher education partnership between schools and the tertiary institution

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For the past 25 years I have enjoyed working in Primary Education in various roles from classroom teaching to school leadership and teacher development, both in New Zealand and overseas. Currently I work at the Eastern Institute of Technology, Hawke's Bay as a Teacher Educator and Practicum Co-ordinator on the Bachelor of Teaching Programme. I hold a Master of Educational Administration and Leadership, and have research interests in how initial teacher education can be strengthened through institutional and school partnerships.

Our Bachelor of Teaching Primary (BTP) is a practice based degree programme in which Candidate Teachers (CTs) spend two days per week in schools and two days a week on campus. Mentor Teachers (MTs) play a crucial role within the design of the BTP. The partnership model articulates the MT role as the professional in school teaching leader. MTs are selected for their skills as expert practitioners and effective models of teaching. They need to be able to establish strong rapport with junior colleagues and be a critical friend. Each partner school has one MT, responsible for a group of approximately five Candidate Teachers who are placed in that school for a full year, two days a week. The MT manages the two school based learning days on behalf of the school and principal, and provides support and guidance to the Candidate Teachers. MTs have reflective conversations with Teacher Educators as part of the delivery of the BTP. Teacher Educators carry out regular school visits and 'check ins', and there are meetings on campus to discuss Candidate Teacher progress and requirements of upcoming courses. Teacher Educators and MTs also share professional development, and partner in research.

The intention of this research project was to explore how one particular group of MTs, four of whom had been with the programme since its inception, conceptualised their role. This presentation is based on an article about to go to publication, reporting findings from the research. It focuses on the value and use of the Mentor Teacher Planner, a booklet that connects Mentor Teachers, Candidate Teachers and Teacher Educators by outlining the key learning in each course and making links between the activity that takes place during campus based learning and the activity that takes place during school based learning. The presentation will explore the place the Mentor Teacher Planner held as a 'boundary object', and its contribution to the partnership success.

Community Based Engineering Research: Why Aging New Zealanders Living in Rural Need Better Transport Service**Hyun-Chan Kim, PhD and Paul Ewart, PhD**

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Dr. Chan Kim is a lecturer in Transport engineering at the Centre for Industry Design and Engineering of the WINTEC. He received his Ph.D. in Transport Engineering from the University of Canterbury. His research interests are sustainable transport, logistics and intermodal freight transport, modelling travel behaviour, and transport safety and have carried out many research and publication by using the econometric methods.

With the increased population of the elderly, providing more active public transportation for an older population is a global issue. This study investigates the travel behaviour and mode choice attitudes of people aged 65 and older and improves transport accessibility by proposing a demand responsive transport (DRT) service in New Zealand (NZ) rural areas and small towns. A case study was conducted at the Thames, Waikato to investigate the travel behaviour of the elderly and explore the presence of heterogeneity in transport mode choice. Thames is located at the Thames-Coromandel District with a high proportion (27.1%) of people aged 65 and older. Due to the popularity of Thames for people aged 65 and over, the population of this age group in Thames is increasing and predicted to increase to 43% in the year 2043. Therefore, the demand for alternative modes of transport, especially once owning or driving a private motor vehicle is no longer a viable option. This study explores the existing problems that the elderly face regarding transportation in Thames and investigates possible public transport improvements to help keep the people aged 65 and over able to travel locally within Thames. To achieve the objective of this study, a revealed preference survey was examined for exploring various types of elderly's travel behaviour and mode choice. A rank-ordered logit model was adopted using data analysis on the choices of individuals over various mode choice options and the critical components of effective DRT service implementation for older people in NZ rural areas and small cities. The results show that as age increases the number of people using their vehicles for transport around Thames decreases and reliance on family or friends. This travel behaviour is especially the case in the major areas of Thames further away from the Thames CBD and shops where walking, cycling or mobility scooters are not a viable option due to long walking distance and need to carry groceries. The destinations that the elderly visit dictates to some extent the type of transport chosen. For example, from the results revealed that the majority of elderly make weekly trips for shopping but modes of transport such as the bus, walking, cycling and mobility scooters are not favourable for shopping in all cases due to the limit on weight, size and quantity that can be physically carried using these transport options. The results are also supporting a DRT service in NZ rural areas and small towns. For further research into a DRT service is justified where the elderly life also restricts the mode of transport used due to travel distance and topography.

Real Time Monitoring of Nitrate in Groundwater Using Wireless Sensor Network

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Isaac Nti is a lecturer with the Department of Information Systems at NorthTec. Isaac has a rich teaching experience spanning about 15 years with AUT in NZ and University of Ghana. His research interests are GIS and Remote Sensing, Environmental Modelling, Data Science and Software Engineering.

With the ever-increasing world population growth and the need to meet its demands, several modern farming practices introduce harmful substances into groundwater. One of the most common of these practices is the use of fertilizers, leading to excess nitrate ions leaching into underground sources of water. The intake of water polluted with nitrate by infants causes low levels of oxygen in the blood. In view of this, the Environmental Protection Agency (EPA), has set a drinking water standard of 10 (ml/L) nitrate concentration. To adhere to this standard, there must be an effective real-time monitoring system to measure and report the concentration of nitrate ions in underground water.

This paper seeks to address the issue of effective monitoring of nitrate concentrations in groundwater while considering energy efficiency and mobility of the user. It presents a real-time monitoring system developed as a wireless sensor network. The network consists of sensor nodes situated in the field (groundwater) to collect nitrate concentration data. Each sensor node has a nitrate ion selective electrode for sensing nitrate concentration and a microcontroller for processing the data. Short distance communication between sensor nodes and the hub is achieved through Bluetooth technology. The data is then sent wirelessly from the hub via Wi-Fi to be displayed in an android application.

The developed nitrate ion monitoring system detected, measured and displayed the concentration of nitrate ions in groundwater within 90 seconds at the start of the operation of the system. Consecutive updates occurred at 15 seconds intervals. The readings were displayed both numerically and graphically to the user's application. The system detected concentrations as low as 2 parts per million (ppm). Using five different concentrations of nitrate solution: 2ppm to 10ppm, the highest recorded error was 5.5%. The system displayed the concentration of nitrate ions in real time, therefore any excess levels of nitrate ions in groundwater can be detected early and mitigated if possible.

NIR LED lighting panel Design for identification and classification of Invasive Weeds

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Morgan is a lecturer in the Engineering department at Unitec Institute of Technology. He has previously worked in industry electronics and mechanical systems for automated fruit grading equipment, employing NIR spectroscopy for sorting internal defects such as internal browning in apples and zebra chip defect in potatoes.

This work is part of a project aimed at the detection and classification of invasive weeds in New Zealand. Through potential collaboration with commercial or non-profit groups and communities, it is hoped that the project will provide economic, environmental and health benefits. By selectively identifying target species, benefits including improved yield, labour savings, water consumption and reduced dependency on herbicides may be possible.

It describes the design and fabrication of a programmable LED light source which allows for the application of a controlled spectrum to a target scene. Spanning the 650nm to 1100nm range to cover the deep red to near infra-red region for capture with a CCD camera, each assembly consists of 10 distinct LED types with an average half power bandwidth of 30nm giving approximately 1 watt of available power at each wavelength. Careful LED selection is required to avoid any gaps within the range while maintaining maximum selectivity between bands.

Due to the relatively high power dissipation, careful consideration was also given to thermal management. The LEDs are fabricated onto aluminium circuit boards which are assembled onto a large 6mm Aluminium mounting plate which provides heatsinking and the addition of further active or passive cooling if required.

The final evaluation rig consists of four such panels with a total of 4 Watts of LEDs per band. Careful placement of these panels around a target region should provide uniform intensity while minimising any shadowing within the scene.

Finally, the design of the of the LED drivers is important for capturing rolling shutter images such as from a typical CCD sensor. For efficiency reasons, many commercial LED drivers are based on Pulse Width Modulation (PWM) for power control. Unless the modulation can be carefully synchronised to the camera shutter then flicker or banding may be present on the resultant image. An alternative linear driver has been designed to provide constant current to the LEDs.

The panels are now being integrated into the complete imaging system for evaluation.

Machine Learning and Multi-Attribute Group Decision Making

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Dr. Abbas Malik has done his PhD in Computer Science from University of Grenoble, France. He has done the specialization in Machine Learning, Data Analytics and Machine Translation (Natural Language Processing). He has also done his Master in Computational Linguistics from University of Paris 7 – Denis Diderot, Paris, France and another Master in Computer Science. He has 10 years industrial experience in Software and Mobile App development. He also has experience in Data Analytics and Machine Learning. He is also an experienced academician and has served in different universities and institutions in France, Pakistan, Saudi Arabia and New Zealand. His areas of research are Machine Translation, Machine Learning, Data Analytics and Mobile apps.

Decision making is the key component of people's daily life, from choosing a mobile phone to engaging in a war. To model the real world more accurately, probabilistic linguistic term sets (PLTSs) were proposed to manage a situation in which several possible linguistic terms along their corresponding probabilities are considered at the same time. Previously, in linguistic term sets, the probabilities of all linguistic term sets are considered to be equal which is unrealistic. In the process of decision making, due to the vagueness and complexity of real life, an expert usually hesitates and unable to express its opinion in a single term, thus making it difficult to reach a final agreement. To handle real life scenarios of a more complex nature, only membership linguistic decision making is unfruitful; thus, some mechanism is needed to express non-membership linguistic term set to deal with imprecise and uncertain information in more efficient manner. In this article, a novel notion called probabilistic hesitant intuitionistic linguistic term set (PHILTS) is designed, which is composed of membership PLTSs and non-membership PLTSs describing the opinions of decision makers (DMs). In the theme of PHILTS, the probabilities of membership linguistic terms and non-membership linguistic terms are considered to be independent. Then, basic operations, some governing operational laws, the aggregation operators, normalization process and comparison method are studied for PHILTSs. Thereafter, two practical decision making models: aggregation based model and the extended TOPSIS model for PHILTS are designed to classify the alternatives from the best to worst, as an application of PHILTS to multi-attribute group decision making. In the end, a practical problem of real life about the selection of the best alternative is solved to illustrate the applicability and effectiveness of our proposed set and models.

Design Internships and Presbyterian Support Otago: Considering elements of success for community partners and students**Caro McCaw**

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Caro is an Associate Professor and Academic Leader in Communication Design at Otago Polytechnic. She is involved in a wide range of local community and regional development projects often working with collaborative student-staff teams, and local community groups, including museums.

This presentation outlines an excellent mutual relationship with NGO Presbyterian Support Otago (PSO). Over the last two years 7 communication design students have interned at PSO as a part of their coursework. For some students this experience has been transformative as they learn to work as in-house designers in a marketing team, while gaining course credit. For their intern host these internships create an opportunity for engaging in new purpose-specific designed activities beyond their current budget.

This presentation will first describe the kinds of activities students engage with as interns. Through interviews with the intern manager and the students themselves, and excerpts from student reports, I will collate and outline the benefits identified by working together.

Discussion will identify key elements of the success of the relationship and possible transferable lessons from our experience.

Sustainability of the international education industry – status quo and challenges

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Dr Pii-Tuulia Nikula lectures on research methods, international markets and global business strategy at the Eastern Institute of Technology. Most of Pii-Tuulia's research focuses on ethical and professional behaviour in the international education industry and pertinent policy frameworks as well as examining the use of innovative teaching practices in enhancing international students' learning outcomes and acculturation.

New Zealand ITPs enrol around 19,000 fee-paying international students each year (MoE, 2018). This session initiates an interactive discussion about the social and environmental sustainability of this sector. The economic profitability narrative has dominated the New Zealand international education discussion for the past three decades. However, there has been an increasing social sustainability focus, emphasising the interests of the international students and the local communities/the government. For instance, the recent changes to international students' post-study work rights, the international student wellbeing strategy and the revised Code of Practice for Pastoral Care of International Students (2016) attempt at safeguarding the rights of students and/or the government. Compared to the economic and social sustainability dimensions, the environmental aspect is only now starting to break into the conversation. What actions should ITPs take to reduce the carbon footprint that results from their international activities? This session highlights existing issues and facilitates a discussion about future sustainability challenges.

**The Business of Theoretical Physics: The Role of Theory in Applied Research,
Innovation and Entrepreneurship**

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I am the Head of Department for postgraduate studies and research at the Otago Polytechnic Auckland International Campus. My current research involved the practical application of theoretical constructs and how this drives innovation.

“Physicists are old hands at entrepreneurship”

(Butler & Anderson, 2013, p. 40)

While many view theoretical physics as being abstract from the world around us, in reality it is being more important to everyday life than most individuals think (Toth, 2017). This presentation will firstly offer several examples of how discoveries in theoretical physics have contributed to the world of business, management, and the economic climate with particular reference to the classical works of theoretical physicists James Maxwell and Michael Faraday. Grounded in Tranfield’s (2003) approach, the second section systematically reviews case studies to illustrate instances of companies which have undertaken research and development drawn from theoretical physics to become household names, such as IBM and 3M. The last section will explore the place of institutes of technology and polytechnics as community-centres of research and how this research can progress theoretical constructs, such as those found in physics, through the development and innovation of knowledge and ideas to benefit communities, businesses, and economic growth.

Relative Age Effect**Geoff Simons**

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Geoff Simons has been involved in organizing sport for 40 years. He was Regional Sports Director for Otago Secondary Schools in the 1990s, involved in NZ University Games for over a decade and has been Sport Liaison Coordinator for the last seven NZ Masters Games held in Dunedin. He is currently heavily involved with the season draws for secondary school rugby and for Bowls Dunedin.

The Relative Age Effect (RAE) has been demonstrated to exist in many sports. Those born closer to a birth date following the age cut-off date make up a bigger percentage of top athletes than those born later following the cut-off date. This was shown to be the case in this study where 1051 male players had represented the national New Zealand rugby team, known as the All Blacks (ABs). With rugby becoming a professional sport in 1996 a comparison of players who first represented the ABs before this year and since then was undertaken to see if the RAE was greater. Before 1996 there were 945 ABs, out of 951, whose birth date were known and from 1996-2016 another 205 have made their debut. The RAE has increased in the professional era.

Artwork
Abstracts

**A place at the Kauri table - pathways linking local immigrant stories with
global conceptual arts communities**

**Deb Donnelly, Mei-Chueh Chao, Marie Enslin, Helen Donnelly, Birgit Moffat and Lisa
Silestean**

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Visual artist, cultural context tutor, mentor in textile studio arts and creative enterprise in the greater Wellington region Donnelly has held teaching and management roles at Whitireia NZ since 2000.

Donnelly recently produced works as artist in residence in Jin Ze, Shanghai 2016, Dali Art Factory, Yunnan, China, 2017 and Studio Kura, Fukuoka, Japan 2018 as a recipient of grants from Creative NZ, NZJEP and Asia New Zealand Foundation, while building a sustainable arts practice in Raumati on the Kapiti Coast.

As current member of the Kapiti Coast public arts panel Donnelly is keen to develop research skills with city council long term goals alongside her teaching at Te Kahui Auaha. Involved with community and industry links Donnelly regularly acts as a facilitator of collaborative ideas, materials innovation as a resource for new immigrant community integration and well-being.

Pathways linking local immigrant stories with global conceptual arts communities.

The core values and beliefs held in many New Zealand immigrant stories allows artists to redefine their practices as New Zealanders. This is a key focus of our current research. The interactive installation is a mode that opens dialogue and documents changes in thinking and acting when resettling in new communities across generations. How does contemporary arts training assist building relationships? By seeking and finding one's place and voice in society the artist reflects on changes and offers growth, sometimes alienation alongside incubation allows for further insights.

Projects based on the artist's place and time of origin can change slowly or radically upon immigration or overseas study.

The Panama Papers - Exhibition**Neil Emmerson and Marion Wassenaar**

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Neil Emmerson and Marion Wassenaar collaborate on Print Laboratory (P lab) projects under the pseudonyms of Bon a Tire and Emboss. They teach in the Print Studio at the Dunedin School of Art (DSA) and have recently shown the project "Panama Papers" with the News Network Group at c3 Gallery in Melbourne and the Forrester Gallery in Oamaru during 2018.

Emmerson and Wassenaar began their collaborative practice in 2014 with a work titled UGANDA. This project responded through a synthesis of parody, appropriation and homage to celebrate and commemorate the 20th anniversary of Alfredo Jaar's 1994 Rwanda print project that dealt with the atrocities occurring in Rwanda. An ongoing feature of the work produced by this collaboration is the reference to art history as in the case of UGANDA, and Johns' and Rauschenberg's "Panama Papers" project. This collaborative practice, with its continuing art historical references, was designed to mentor students by engaging with the history of their discipline and prints continuing ability to be a potent form of political agitation. This collaboration has completed three projects BON A TIRER, EMBOSS and a performance work PLAB POPULAIRE involving the use of the risograph. It was staged at the 'Art and Revolution' exhibition at DSA in 2017. This work commemorated the 50th anniversary of print works produced by the Atelier Populaire during the 1968 Paris student riots. Exhibited works are to be seen in conjunction with their Whanaungatanga symposium presentation.

For more information and images go to:

UGANDA <https://dunedinprintlab.wordpress.com/projects/uganda/>

Panama Papers <http://www.thenewsnetworkproject.org/>

PLAB POPULAIRE <https://dunedinprintlab.wordpress.com/2017/11/22/art-revolution/>

Tussock Butterfly Project**Hannah Joynt and Gavin O'Brien**

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Hannah Joynt is a contemporary artist and lecturer at Otago Polytechnic College of Art, Design and Architecture since 2007. Her individual studio based art practice is focused around engaging with the landscape and environment through drawing. She works collaboratively on creative projects that extend her practice into new territories and communities of practice.

Gavin O'Brien is a senior lecturer at Otago Polytechnic College of Art, Design and Architecture. He holds graduate degrees in Art, Architecture, and Applied Science and has worked in fields of architecture, education and research as well as exhibiting as an artist/designer where his work explores the common turf between art and design.

Our submission for the symposium exhibition is an installation of ten stylized tussock butterflies. The ten are from a limited edition, handmade series of butterflies based on Enid Hunter's winning design for the 1970 two cent stamp. They are made from sustainably sourced bamboo plywood, that has been laser cut and painted. These butterflies are the first design outcome in an ongoing collaborative project with New Zealand Post and Ahi Pepe/MothNet. The latter, a citizen science project run by Manaaki Whenua/Landcare Research that aims to engage teachers, students and whanau with moths, and through moths with nature and science. We see Enid Hunter's highly stylized hard edged graphics (in total there were three butterfly stamps and several others) as pieces of classic New Zealand design that many Kiwis are familiar with. The project also seeks to celebrate and contribute to this New Zealand design lineage and use our design research to contribute to tangible community based outputs. Ten percent of each sale is donated to MothNet.

Materere

**Nicol Sanders-O'Shea, Graeme Cornwell, Donna Dinsdale, Quinton Bidois, Kelcy Taratoa,
Anne-Marie Simon, Darcell Apelu, Dale Sattler, Kyle Sattler**

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The Bachelor of Creative Industries teaching staff from Toi Ohomai. Staff represent a range of cultural backgrounds and ethnicities, dealing with a wide variety of contemporary issues, concerns and perspectives. They are specialists in Graphic Design, Fashion Design and Textiles, Visual Arts, Photography and Music Production.

“Materere” introduces the notion of the potential threat of death: 'Mate' refers to death and 'rere' refers to its speed and spread. “Materere” also engages with the concept of exporting self-replicating ideas from one place to another as a contagion; transformation of ideas from one network to another as a virus might spread. “Materere” exhibition explores the relationship between certain borders, boundaries and cultural territories such as: Environmental issues, telling stories about local cultural histories, biculturalism, feminist discourse, public and private spaces and various ontological investigations. It is an exhibition of current art and design work by 9 contemporary artists and designers residing in Tauranga Moana (the original dwelling place of Kuhungungu). The intention of “Materere” is to challenge conventional thought and to replicate in a new territory be it physical or conceptual.

Flute Plane**Jane Venis and Hannah Joynt**

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Hannah Joynt is a contemporary drawing practitioner who works in a range of media, processes and scales. Visual interpretation of sound by drawing is recent avenue in her exploration of 'drawing as a language'. Jane Venis a musician, performance artist and maker of sculptural musical instruments. Her work is often playful and experimental and engagement with the viewer is critical to her practice. In 2018 they exhibited a performance video and performed live at Lines of thought an International contemporary drawing exhibition at CICA Museum in Seoul. 2019 upcoming events include acceptance into the Buinho Creative Residency in Portugal and Drawn to Sound solo exhibition and performance at Ashburton Art Gallery.

In our continuing research on performative practices we address the question "How do we collaborate successfully with two very different creative practices in order to explore new territories within a contemporary context?" We propose to exhibit an eleven minute video work 'Flute Plane' professionally filmed last year. The video documents the making of a large spontaneous pastel drawing made in response to both guitar and flute improvisation. In real time, one of us plays a range of instruments in an improvisational way and the other responds to the music interpreting the sound as a largescale drawing. However, there is a moment at some point early in the performance when the musician starts to respond to the mark making, as the drawing has the ability to 'draw out' phrases from the instrument in 'dual improvisation'.

To view video see private Vimeo link below: <https://vimeo.com/315356389/243072bfac>

Puzzle Trays

Michael Hawksworth, Wellesley Binding, Jill Webster, Peter Baker, Linda Bruce, Paula Taaffe, Bridget Sutherland, Nigel Roberts, Anthony Chiappin, Roger Kelly and Raewyn Paterson

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Practitioners from IDEASchool, Eastern Institute of Technology, engage with a wide range of contemporary themes and concerns. Media and disciplines include sculpture, painting, ceramics, printmaking, video, pattern and object design. Contributing exhibitors are Michael Hawksworth, Wellesley Binding, Jill Webster, Peter Baker, Linda Bruce, Paula Taaffe, Bridget Sutherland, Nigel Roberts, Anthony Chiappin, Roger Kelly and Raewyn Paterson.

Approaching the theme of the exhibition as a provocation to explore art and design practices in relation to the concept of Whanaungatanga, selected practitioners responded with a range of strategies. The children's educational puzzle tray, where things are designed to fit in a rational framework, served as an ironical figure to approach the divergent nature of realities within community structures.

Some strategies include:

A re-presentation of the ITP workplace through a simulacrum of its marketing and prospectus mechanisms.

A study for a 'world's gallery', as a metaphor for art's elusive relationship to a world.

Epistemological inquiries into the fragile condition of knowledge and 'truth'.

An engagement with te reo setting up dialogues between various communities and natural environments.

Material based practices that address environmental concerns, water degradation and species extinction, to effect cross cultural dialogues.

Working outside an anthropocentric focus, other strategies include engagement with animal communities, and using image, text and music to communicate beyond prescribed structures.

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