academyEX Converge Research Symposium

24th November 2023

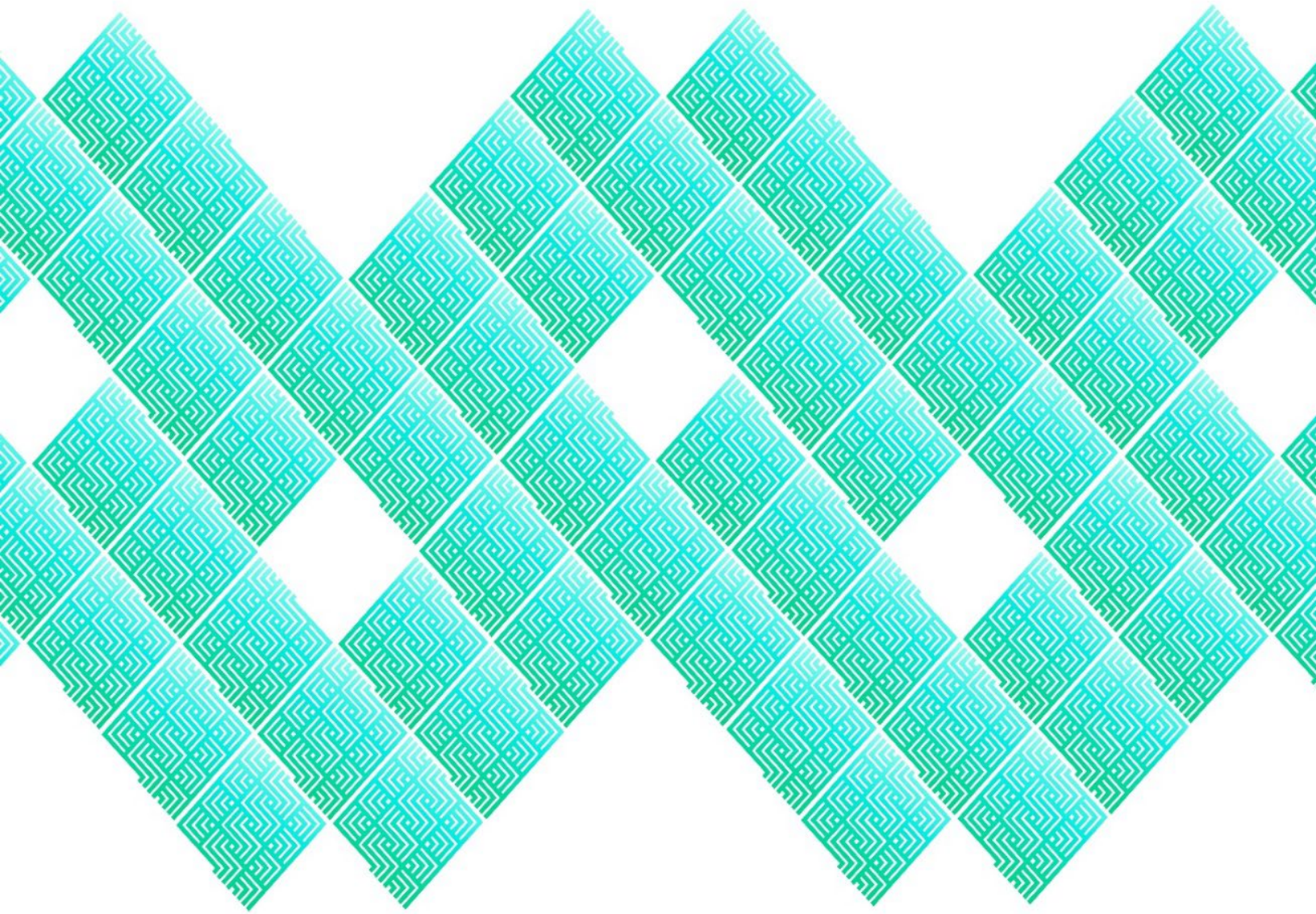
Keynote Speaker

Dr Teo Susnjak

Beyond Traditional Academia: AI-Driven Approaches to Research

In his keynote talk, Teo will be talking about his approach to research, with a focus on addressing real world problems such as analysing the New Zealand economy and gaining insights into student learning. He will be sharing some of his recent work in applying Artificial Intelligence tools for various purposes, including visualisations and literature reviews. Along the way he encourages researchers to always look for new research trends across disciplines and be prepared to move outside their comfort zone.

Research Workshops



Building climate-adaptive communities in Aotearoa using a Play-based methodology

Research Workshop
academyEX Converge Research Symposium, 24th November 2023

Naomi Pocock
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Workshop Summary

Transdisciplinary research is necessary to solve complex challenges. One qualitative method for developing creative, innovative, transdisciplinary mindsets is Serious Play®. Using facilitated play, workshop participants will draw on their existing knowledge to creatively envision ways for AI to help build climate-adaptive communities in Aotearoa, before the lights go out (again).

While a plethora of climate change adaptation decision-making strategies exist, little evidence exists that their in-practice use leads to better outcomes and the time for extensive research is running out. Thus, transformative methodologies are needed to shift mindsets urgently. Play offers one innocuous way to encourage adults to engage inquisitive, imaginative and unprejudiced attitudes to solve complex challenges or envision out-of-the-box scenarios. This workshop is loosely based on Serious Play® and brings an eco-friendly twist to this facilitation tool developed by Lego® by using pre-loved items sourced from op-shops, instead of plastic.

Many New Zealand communities will be disrupted by climate change.

Many New Zealand communities will be disrupted by climate change. Approximately 65% of people live within 5km of the coast, 675,500 live in areas prone to flooding and a further 72,000 are at risk of expected sea level rise The intensity of tropical cyclones will increase, causing flooding, landslides and erosion, damage to belongings and households, displacement, and trauma. Given 80% of marae are built on low-lying coastal land or flood-prone rivers and low-income households are often uninsured, vulnerable communities require prioritisation and different communities will need to adapt in different ways. The challenge is complex, and made even more so with the deeply emotional connections between individuals, their significant others (close friends and family) and communities.

Thus, workshop participants will bear in mind the affective nature of climate-adaptation as well as the urgently prevalent need for adaptive communities across Aotearoa, and use their existing knowledge and experiences to contribute creatively to this visionary play-based process.

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About the presenter

Dr Naomi Pocock advocates for future generations thriving within Planetary Boundaries, and takes an education-comes-first approach to her advocacy. She lectures part-time at the University of Waikato on sustainability and regeneration, has developed political party policy in education, stood in two general elections (2020 & 2023), and co-founded a charitable company, STEM Curiosity, taking Sensory Science into schools. Her research explores meanings of home(s) in the context of major life disruptions, and she hopes to continue this research in the future. Naomi enjoys dancing, hiking and mountain biking with her three boys (though they'd want the dancing to remain a secret!)

Resources

Link to presentation slides

Mastering your potential: Building reflective practice and a 'Second Brain' into your already busy life

Research Workshop

academyEX Converge Research Symposium, 24th November 2023

Katy Lloyd

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Workshop Summary

When you embark on study at AcademyEX, your brain is awash with an exhilarating wave of information to be filtered, refined, explored, stored, or discarded. And that's before you start critically engaging with it! Reflective practice can help you process what is interesting and excites you. What is useful or what challenges you? What are your key insights, and what do you want to explore more? How do you let the threads of information weave together to form into a new and innovative stream of work that you want to focus on and explore further.

This workshop will explore two practical concepts to help you answer these questions.

- Reflective Practice: Developing a strong and personalised reflective practice, where you deliberately and purposefully review both what you are consuming as well as your own thoughts and processes. Effectively practicing 'metacognition'.

If you are someone that needs to find a way to reflect on the information you consume, learn from it and enhance your own organisation systems and processes for information you gather, then this workshop is for you.

Second Brain: This is an external digital extension of your own mind that helps you collect, organize, and access information, ideas, and tasks, making it easier to manage and leverage your knowledge and productivity. This is valuable repository for the information and insights gained from your reflective practice.

Whilst this workshop will not be exhaustive on these topics, it will be an informative, fun and interactive session where you will leave with a plan for your own reflective practice, and the curiosity and plan to start building your own second brain in a way that works for you.

If you are someone that needs to find a way to reflect on the information you consume, learn from it and enhance your own organisation systems and processes for information you gather, then this workshop is for you.

About the presenter

Katy Lloyd is a driven life-long learner. She completed her Master of Technological Futures in early 2023, as a working mum, small business owner and part-time homeschooler alongside her husband during Auckland's covid lockdowns. With an almost obsessive drive to consume information, she had to work out how to process and make sense, of all the information she was exploring as she progressed through her Masters. This led to the development of a strong and varied approach to reflective practice, and a passion for knowledge management which led her to discover the second brain concept.

A natural 'dot connector', Katy has had a varied career across operational leadership, people and culture, coaching and business development. She has a passion for big picture thinking, strategy, collaboration and facilitation. A great day for her is supporting people and businesses fulfil their potential through coaching and challenging them to think differently and work smarter together. She's also awesome at pub quizzes having recently won the inaugural AcademyEx alumni quiz night.

Resources

Link to PDF of presentation

Collaborating with AI in the research process

Research Workshop

academyEX Converge Research Symposium, 24th November 2023

Tim Gander

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Workshop Summary

Participants in this workshop will work through three stages of the research process that can be supported with AI tools. Tim will guide participants on a journey of discovery, exploring practical applications of how artificial intelligence can support you with idea generation, literature discovery and data analysis. By harnessing the power of AI tools, you'll unlock new dimensions of efficiency and effectiveness in your academic pursuits.

Tim will begin by showcasing the potential of AI in generating innovative ideas for research projects using curated master prompts as well as a more iterative approach in ChatGPT. Discover how to customise prompts to suit your particular output.

Participants looking to find a new way to search for literature will learn about the dynamic duo of "Research Rabbit" and "Lateral.io", two AI-powered tools that can streamline the literature review process, helping you quickly and comprehensively gather essential academic resources to support your research.

Tim will also explore the capabilities of ChatGPT, demonstrating how you can employ this AI-powered language model for qualitative data analysis. Uncover valuable insights, patterns, and perspectives within your data, all while accelerating your research output.

All workshop participants will have time to explore the tools and discuss how they might be used effectively to support their research process.

This workshop is suitable for researchers at any stage of their research journey; the tools can be applied in a variety of ways at each stage of the research process and, in addition, will be relevant for any students or advisees that participants may be working with.

About the presenter

Based in Gisborne, Tim Gander has over a decade of experience working with educators to solve practice-based challenges across Aotearoa. He has worked with The Mind Lab on the PGCert in Digital and Collaborative Learning, Master of Teaching and Education Leadership and the Master of Contemporary Education. With a teaching background, Tim brings practical knowledge and expertise to his engaging presentations on education and leadership. He is completing a PhD that focuses on using BIE coaching as a collaborative tool to enable more transparent communication, goal-setting, and opportunities to create hybrid spaces. Tim hosts the 'Impact Series' podcast with Tech Futures Lab and is also the founder and editor-in-chief of the academic, peer-reviewed journal He Rourou.

Resources

Link to workshop slides

Apes don’t have tales? Writing with primates

Research Workshop

academyEX Converge Research Symposium, 24th November 2023

Kingsley Melhuish & Craig Hilton

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Workshop Summary

Whether you prefer to draw, paint, or just doodle, being creative is more than just an enjoyable pastime. Its affective power can give us insights into new ways of looking at the world. Because of its ability to connect with people at a deep level, creative expression can be a potent tool in research, but it requires its own methodologies, because quite often the investigation is not so much about solving a problem, as it is about generating insights in to an artist’s perspective. What does the artwork reveal about the artist and the society in which they inhabit? Whereas an artist’s expression is informed by a range of ontological factors including experiences and socio-cultural perspectives, AI’s perspective is informed by a collection of human outputs on the internet. Is individuation possible with AI? Can AI experience the embodiment of the creative process? Will future AI have sentience to be able to be expressive? As we move from the advent of generative artificial intelligence (AI) to it becoming a hinge event, there is a lot of justified anxiety amongst creative industry practitioners about how AI might play out for them. The very concept of creativity is challenged. Many creators and designers whose incomes are derived from creative outputs perceive AI as a threat to their livelihoods (not to mention their feelings of self worth). Generative algorithms that can design, say, an image from prompts, or create a piece of pop music representative of the current top 10, further imposes on their already insecure income streams. Will AI, like many of the creative tools before it (photography, 3D printers etc) expose human creative limits, or free up human creativity for new possibilities? In this interactive workshop, Dr Craig Hilton and Kingsley Spargo Melhuish explore expressive creativity as a research practice, and because the field of creativity is being currently disrupted, the role that generative AI might play.

About the presenters

Craig Hilton is a New Zealand scientist, artist and educator. After completion of a PhD in genetics and biochemistry at the University of Otago in New Zealand, he took a position at Harvard Medical School and then later at the University of Massachusetts as an oncologist and immunologist. He then returned to New Zealand in 2003 where he obtained an MFA at the Elam School of Fine Arts. Hilton's conceptual art practice explores the intersections and interactions between science and art, technology and biology using whatever media necessary. He is particularly interested art-science collaborations i.e. those with genuine art and science value/outputs; how art might be able to contribute to dialogue regarding science, molecular biology, biological discovery, biotechnology etc; and the cultural implications of the these revolutionising technologies. The close interaction of artists and scientists is essential for any mutual understanding of process, method and culture. Hilton believes that by placing the goals of science and art in close proximity the intentions of each become apparent to the other and true collaboration becomes a possibility.

Kingsley Spargo Melhuish is a PhD candidate and professional teaching fellow at the University of Auckland (School of Music), a candidate advisor at academyEX, musical nomad, sound-disruptor, creative conspirator, a protagonist for learners, and co-founder of the *Kim Meredith Gallery*. His creative practice includes musicing as a multi-instrumentalist, composing, sound design, and music education. His current research into creative collaboration investigates the idea of exploring our differences as a source of creative potential that can take us in unexpected and exciting directions.

The Convergence of Design Thinking, Systems Thinking, and Futures Thinking for Shaping A Better World

Research Workshop

Jade Tang-Taylor
academyEX Converge Research Symposium, 24th November 2023
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Workshop Summary

The Research Workshop on the Convergence of Design Thinking, Systems Thinking, and Futures Thinking for Shaping a Better World aims to foster collaborative exploration and knowledge exchange at the intersection of these three critical cognitive frameworks. In an era marked by unprecedented global challenges and complex systemic issues, this workshop brings together scholars, practitioners, and thought leaders to investigate the potential synergy between these distinct yet complementary approaches.

- Design Thinking, with its emphasis on user-centered innovation and problem-solving, offers a creative lens for envisioning the future.
- Systems Thinking, renowned for its holistic perspective on interconnectedness and causal relationships, provides a means to understand the complex, dynamic systems that shape our world.
- Futures Thinking anticipates alternative scenarios and guides decision-making toward preferred futures.

Key Workshop Objectives:

- **Facilitate Interdisciplinary Dialogues:** The workshop will provide a platform for participants to engage in cross-disciplinary discussions, encouraging the exchange of ideas and methodologies among scholars, practitioners, and educators from various fields.
- **Explore Practical Applications:** Through case studies and interactive sessions, the workshop aims to explore how the convergence of these thinking paradigms can be practically applied to address real-world challenges, such as climate change, urbanisation, and social justice.
- **Identify Synergies:** The workshop will seek to identify and articulate the points of synergy and complementarity among Design Thinking, Systems Thinking, and Futures Thinking, with a focus on how they can mutually reinforce each other in problem-solving and decision-making.
- **Develop Pedagogical Insights**: Participants will discuss the integration of these thinking paradigms into educational curricula, with an emphasis on how to nurture future thinkers capable of addressing the multifaceted issues of our time.

- **Foster Community Building:** Through collaborative activities and discussions, the workshop aspires to foster a community dedicated to shaping better futures. It seeks to connect like-minded individuals and organisations committed to addressing complex global challenges.

This collaborative workshop aims to stimulate novel insights, interdisciplinary partnerships, and the development of practical tools and methodologies that can be applied to a wide range of fields, including design, policy-making, and innovation. By bridging these thinking paradigms, the workshop aspires to contribute to the development of a more sustainable, just, and ethically grounded future.

Researchers, practitioners, and educators are invited to join this vibrant exchange of ideas, fostering a community dedicated to shaping better futures in an era of unprecedented complexity and change.

About the presenter

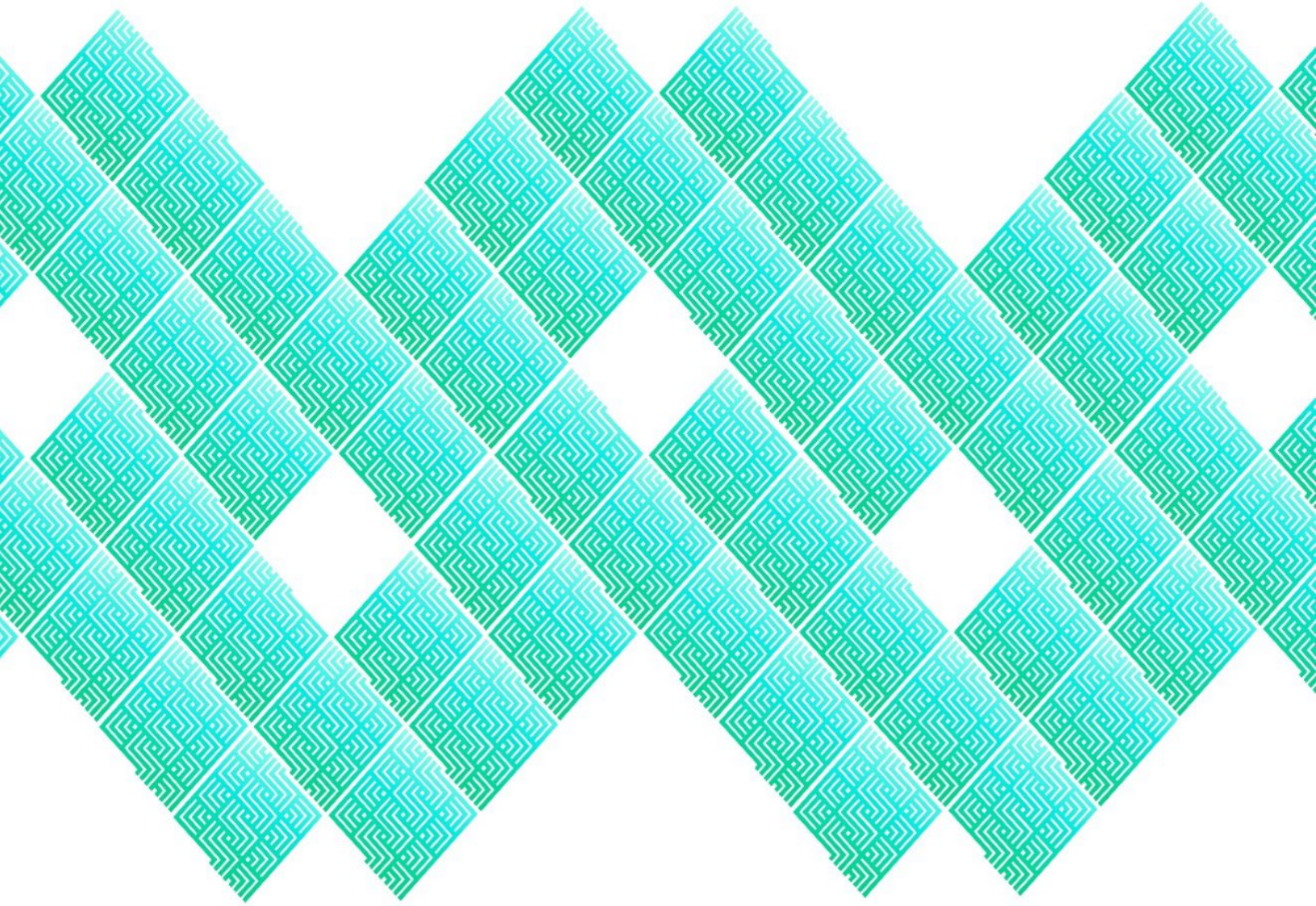
Jade (Poh Gaik) Tang-Taylor is an accomplished designer who initially started her career in graphic design, digital design and later delved into strategic design and human-centered design.

Her academic background includes a Bachelor of Art & Design, and a Masters of Arts Management from AUT (Auckland University of Technology), she remains committed to continuous learning, participating in the 'Designing for Social Systems' masterclass at Stanford D.School and is currently Innovation Director at academyEX | Tech Futures Lab.

Jade's personal background as a proud Tangata Tiriti (non-indigenous) migrant woman of colour, has profoundly influenced her perspective and shaped her commitment to advocating for Diversity, Equity, Inclusion, and Belonging. She lives in Tāmaki Makaurau / Auckland, Aotearoa New Zealand with her little family, and is a proud working mum of one.

Currently, she is fascinated with the intersection of design thinking, systems thinking and futures thinking. Despite a squiggly line career path, the central thread through Jade's personal and professional background is that she is deeply passionate about Design for Social Innovation, Social Change, and more recently Systems Change, and with the potential of technological futures (including AI & Web3) Jade aspires to co-create better futures.

Research Presentations



Exploring Futures Literacy in Education

Research Presentation

academyEX Converge Research Symposium, 24th November 2023

David Parsons

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"The future does not exist in the present, but anticipation does. The form the future takes in the present is anticipation". *(Miller, 2018, p. 2)*

Introduction – Futures Literacy

Science fiction is not about the future. Rather, it is about viewing the present through a significant distortion that gives us a new perspective on it (Lothian, 2013). For example, Burgess (1978) describes George Orwell's novel 'Nineteen Eighty-Four' as being a reflection of the world of 1948, when it was written.

This article is not about science fiction, but it is about a related way of seeing the present through the lens of the future using an approach called *futures literacy*. People think about the future in their personal lives all the time, but mostly in the short term, a few days, weeks, or months ahead. In professional roles such as forecasting the weather or economic growth, they are constrained by the probabilities that relevant models and data can provide. Such considerations of the future do not address what might be possible or indeed desirable (Miller, 2007). Futures literacy can take us beyond such limited views to a more active relationship with the future.

What Is Futures Literacy?

Futures literacy is about trying to understand, anticipate, and navigate the future. It involves thinking critically and creatively about the future to help us make better-informed decisions in an environment of uncertainty and rapid change. It is not about trying to predict a specific future, but to consider different possible futures and address their implications. Futures literacy means reflecting on the past, sensing and making sense of the present, and using this reflective knowledge in anticipating the future (Karlsen, 2021).

There are several ways in which futures literacy (and a futures literacy mindset) can be developed. This may be done by outlining different types of future scenarios - which may be utopian, status quo, or dystopian (Westover, 2021) - questioning assumptions, and considering different perspectives. By imagining possible futures, it is possible to explore different visions of what the future may hold. These should be addressed critically, thinking about consequences, biases and assumptions, a process that may

help us to plan for the future. Considering different futures can also make us more adaptive to change and disruption and is valuable for individuals and organisations in all areas of society.

Futures literacy is about trying to understand, anticipate, and navigate the future.

Futures Literacy has been addressed by a range of global, national, and local organisations, including UNESCO , the Welsh Government and Hanze University of Applied Sciences. The topic may be addressed at varying levels of complexity. For example, it may focus on practical aspects of planning such as considering possible futures to make informed decisions about issues such as waste management, energy production and healthcare, and considering how different professions might need to develop specific skills and policies to prepare for the future (Science Animated, 2023). However, to engage more effectively with it, it is necessary to consider some deeper perspectives on what futures literacy might look like when we interrogate it to understand the different ways in which we consider the future.

Approaches to Futures Literacy

Mangnus et al. (2021) suggest that futures literacy is a complex area and that there are several different approaches to it, outlining the following:

- Predictive futures
- Plausible futures
- Experimental futures
- Critical futures

The first two approaches centre on reacting to possible future contexts. The predictive approach attempts to predict and mitigate future risks, while the plausible approach looks at how to navigate possible futures. Their main focus is to be literate about what the future may hold. The other two are somewhat different in that they are less reactive and are more about how the future may be constructed in the present. The experimental approach addresses the collective co-creation of new futures and how such futures can become present-day reality. The critical approach is more analytical, drawing out the political implications of imagined futures.

The predictive approach attempts to predict and mitigate future risks, while the plausible approach looks at how to navigate possible futures.

Miller (2018) outlines a rather complex framework for describing futures literacy and uses it to suggest some different ways in which people might think about the future, some more helpful than others.

- Forecasting
  - Futures are extrapolated from the past. They might rely on things like statistics and trends.
- Destiny

- This is a narrow view of the future based on fixed assumptions about what might happen and is fatalistic.

- Creative reform
  - Imaginary futures are focused on solving known problems in innovative ways with a focus on making a difference.
- Self-improvement
  - The focus is on the self and related to attaining pre-determined future goals relating to one's own consciousness about personal futures.
- Consciousness-raising
  - This involves thinking about how things might repeat in the future to see generalised patterns and aspects of how events play out.
- Wisdom–Tao–being
  - Anticipation of the future helps us to make sense of emergence in the present, and its local rather than general meaning

From these various perspectives, it can be seen that there are multiple ways of considering the future and that some of these may be more helpful than others. The following sections consider ways that futures literacy might appropriately be used in an educational context.

Futures Literacy in Education

Futures literacy can be applied for many purposes, but how can it be used in education? One key aspect is helping students to prepare for an uncertain future by developing critical thinking, adaptability, and problem-solving skills. It can help students to think ahead over the longer term, and what the future consequences of their actions and decisions might be, taking into account ethical issues. It also gives students a context in which to address complex problem-solving in addressing global challenges such as those outlined in the UNESCO sustainable development goals. Developing these futures literacies can perhaps empower students to make more informed decisions in their own lives. Futures literacy is also an interdisciplinary approach where students can consider futures across a range of different areas of knowledge. The process of imagining futures may also be engaging for students, helping them to develop their imaginations and engage in project-based learning around the future to address real-world problems.

Futures literacy is also important for educators, perhaps more so, since they need to be able to guide their students in exploring possible futures and how their students can be helped to prosper in them.

Young Citizens for a Sustainable Planet

One practical example of applying futures literacy in an educational context is described in a case study from a 2015 UNESCO Youth Forum called "Young citizens for a sustainable planet" (Marasaco et al., 2018), As part of a futures literacy project, hundreds of young people from around the world participated in a futures literacy activity. The first part of the activity involved the participants being asked to respond to the following questions about the world in 2040.

- What does work look like?
- What is it like for wildlife and nature?
- What is the weather generally like?

- What is new and hopeful in your community?
- What is new and worrying in your community?

The next task asked them to imagine their preferred future, followed by a session where the group tried to reflect on their ideas with different prompts such as "how would your idea be different if one of the big problems or big solutions that you included initially did not happen?" Groups then made 3D models of their possible futures, and the process concluded with participants identifying some concrete steps that they could take when they returned to their home countries.

How might this case study be informative in terms of creating learning experiences to develop futures literacy? There are several cues that can be drawn from it. The first is specifying the timescale. Students might be asked to think about the world 10, 20, 50, or 100 years ahead, for example. Which timescale might fit the learning outcomes best? The second cue is that a clear and relevant set of questions need to be outlined. The third is that critical, creative and collaborative activities need to be designed to give students enough opportunity to deeply explore their thoughts, feelings and ideas, and develop actionable outcomes.

Educational Design Fictions

Another approach to futures literacy in education is educational design fictions (Mann et al., 2022). In a similar vein to the ideas that have been introduced in the previous section, these fictions help us to consider education futures in ways that allow for collective imaginings, explorations, and conversations about the future and present shape of education. These fictions imagine "near-futures that raise questions about direction, challenge understandings and provide a lens on the present" (Mann et al., 2022, p. 303).

Educational design fictions can use a range of narrative approaches, contexts and styles which can then be used to critically examine the stories to discuss how they might shape education. They can highlight gaps between possible worlds and legacy practices and provide new perspectives on the challenges and assumptions of the present.

Applying Futures Literacy in Educational Practice

There are many literacies that, it is suggested, students should attain in the 21st century. In addition to the traditional language and number literacies, it is also suggested that data literacy, digital literacy, media literacy, Artificial Intelligence literacy and visual literacy, among others, are important for learners to develop. Why might we consider adding futures literacy to this every growing list? From the concepts and resources addressed in this article, it is clear that futures literacy presents an opportunity for students to regain some agency over what is an increasingly troubling future. By applying futures literacy in practical ways, as in the UNESCO case study described earlier in this article, and exploring design fictions that can cast an eye on the present, learners can begin to identify actions they can take now to influence their future paths.

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About the author

Dr David Parsons is Research Director at academyEX, dedicated to supporting and promoting research activities within the organisation. His academic background is in digital technology, with a Master's in Computer Science and a PhD in Information Technology. He has a special interest in the relationship between education and technology, both education about technology and education with technology.

He has had a long career in both academia and industry, starting in the UK in the late 1980s lecturing in Computing in London, before taking up an academic role at Southampton Solent University. Following this he worked as a trainer and consultant in the software industry for a range of companies, including partner roles with IBM and Oracle. He moved to New Zealand to take up a role at Massey University in 2003, later becoming Associate Professor in Information Technology. He joined The Mind Lab (now academyEX) in 2015.

He has published many books and articles on topics across computer programming, software development processes and technology enhanced learning. He is editor in Chief of the International

Journal of Mobile and Blended Learning and a Certified member of the Association for Learning Technologies.

Resources

Link to presentation slides

Understanding skilled workers' readiness for change and adaptability in the context of future technology adoption/disruption

Research Presentation

academyEX Converge Research Symposium, 24th November 2023

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Research Summary

Advanced digital technologies, including artificial intelligence (AI) and automation, are profoundly transforming economies, industries, and our daily lives. As we navigate through an era marked by swift and continuous change, driven by emerging and disruptive technologies (EDT), it becomes clear that the speed of these transformations is likely to increase. This evolving landscape necessitates a critical re-evaluation and update of our current strategies for managing change, ensuring they remain relevant and effective amidst increasing uncertainty and complexity. Looking ahead, the importance of adaptability, resilience, and the skills to manage uncertainty will become essential.

The Future of Jobs Report by the World Economic Forum (2023) highlights that technology adoption, especially over the next five years, will be a primary factor in business transformation, with a projected 23% change in the labour market structure. In New Zealand, this transition, marked by the rise of automation, is expected to temporarily increase unemployment rates as job displacement occurs before workers are retrained for new roles, (New Zealand Business Advisory Council, 2019). This raises the question: are New Zealanders preparing adequately for these changes? Contrasting with European perspectives, New Zealanders generally exhibit less optimism regarding the impact of emerging technologies, with a notable lack of concern over job displacement (Green, 2020). With the new and widespread availability of generative AI tools (such a ChatGPT) research has indicated that high earning skilled and educated workers will be significantly affected by AI automation (Mckinsey, 2023). Globally, the expected business disruption from generative AI is significant, with anticipated workforce cuts and large reskilling efforts required to address shifting talent needs.

This project looks to explore the research question:

How might skilled workers improve readiness for change to support adaptability and embrace technology transformations in their industries?

In order to understand if skilled workers can improve their readiness for change and proactively lead the change in response to future EDT instead of being reactive to it, the following sub questions were proposed:

1. What is readiness for change and adaptability, and what are the factors to consider?
2. How can readiness for change and adaptability be measured?
3. What can we learn from Māori indigenous perspectives on adaptability?

4. What are the perspectives, beliefs and attitudes of skilled workers towards technology change, and the impact this will have on the future of their industries?
5. What are the factors that can support the readiness for future change and adaptability of skilled workers?

The methodology included qualitative interviews exploring: the perceptions of a diverse group of skilled workers likely to be affected by EDT; insights from professionals working in change-related fields; and perspectives from Māori indigenous wisdom. The data from these interviews was analysed and synthesised in the context of desktop research to produce a report of initial findings.

It is recognised that multiple world views and mātauranga Māori can deepen and enhance other theories. This frame of reference is important for deepening understanding, especially given the context of being in Aotearoa, New Zealand. It is felt that the insights on viewing adaptability from Māori indigenous perspectives gives valuable holistic perspectives to this research project.

It was found that skilled workers had a low awareness of EDT and a unanimous belief that their roles would remain largely unaffected in a future of EDT. This is concerning given the prediction of anticipated job churn as a direct result of EDT predicted to affect all skilled worker industries. Multiple factors impacting individual readiness for change were explored and a model was proposed to increase awareness of personal and contextual attributes that influence readiness for change over a continuum of time. This model is thought to be important to increase self-awareness of individual readiness for change. Recommended key initiatives that organizations need to be aware of to enable change capabilities to survive and thrive in a technology-accelerated future include increasing awareness around EDT and developing learning agility.

In next steps, the findings from the initial part of this research project will be tested out over a series of workshops with skilled workers to further explore and refine these concepts. This will then be further developed into a framework to assist in increasing awareness of ETD and individual awareness and abilities around change readiness.

It is hoped that by sharing the initial research findings and plans for the second phase of my project at the Converge Symposium, it will generate feedback and ideas that could be incorporated to further inform this work.

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About the presenter

Dianne, a mTF student with a deep curiosity about the human potential in a future shaped by rapidly evolving and disruptive technologies, has a unique perspective on the changing nature of work. Her background in Audiology and Communication Disorders has given her firsthand experience in assisting individuals with significant hearing challenges, addressing the complexities these challenges pose for communication and human connection. Much of her career has been dedicated to educating others about new hearing technologies, observing the intersection of such transformative technologies with human relationships. Dianne's interest extends to exploring the essence of being human in the future, particularly in the realms of communication, adaptation to change, and the conscious creation of leadership and environments that enable people to thrive. She advocates the need for more thought leadership in the area of change management and the redesign of work cultures to enhance personal engagement and generate broader societal benefits.

Aotearoa New Zealand's Climate equity concerns in relation to housing: can technological solutions address this prior to 2030?

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

Anna Zam

Research Summary

Climate equity is defined as the principle that each individual -regardless of gender, race, ethnicity, income, and other characteristics–should benefit from a clean environment and have access to the resources and opportunities they need to protect themselves from the impacts of climate change.

In New Zealand, there are few technologies of a pure SaaS form that are addressing climate equity in and of itself, attributing climate equity as a multi-faceted wicked policy problem, which puts the problem squarely within the realm of the public rather than an issue that technologies in the private sector can support.

Climate equity is a relatively new academic field and whether there are any technologies which can help to address the multifaceted wicked policy problem that is a just transition to climate targets and housing which forms one sector of this, is relatively unexamined.

Another research gap is whether technological solutions can address this issue, primarily because of the intersectional issue that a lack of digital access presents for communities which are most affected by climate equity challenges (for instance, rural or lower socio-economic or poorly connected regions in New Zealand).

Comparative literature review analysis helped the author to situate the problem in the local and global context given housing affordability is not an issue experienced by New Zealand alone. The research methodologies adopted include primarily empirical evidence through questionnaires and interviews, both through remote-enabled survey tools and face-to-face meetings.

Equotee, an equity management platform, that aims to make co-ownership of homes effortless. Equotee's mission is to empower shared ownership of homes efficiently while leveraging its equity for sustainable home improvements.

About the presenter

Anna Zam, a scholar at academyEX, advocates for societal transformation through socio-legal initiatives. With a jurisprudential background and experience as a junior barrister Anna ventured into social entrepreneurship, aiming to bridge the justice gap. This was foundational in her career transition into social enterprise. Her focus on equitable homeownership led to Equotee, a platform revolutionising real estate by democratising home ownership and promoting climate equity. Anna's academic pursuits centers on the just transition, climate equity, and sustainable community development. Her dedication embodies a commitment to reshaping societal structures for a more equitable and environmentally conscious future.

AI for equity, inclusion and effective pedagogy - results from a Community of Practice

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

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Introduction – AI in education

We are in a year of change as Artificial intelligence (AI) transforms various aspects of society, including education. However, the implications of AI for education are not well understood, especially from the perspectives of educators. While the potential of plagiarism steals the headlines in discussions regarding AI in education (Franks, 2023; Nicol-Williams, 2023), diverse benefits could enable positive outcomes for learners and educators (Kim et al., 2022). This article reports on a study that explored how educators in New Zealand perceived the impact of AI on education and exposed potential implications for equity, inclusion and pedagogy. The study established an AI-focused Community of Practice (CoP) that co-created a survey that was distributed to educators from different sectors and contexts. The findings revealed that educators had diverse and nuanced views on AI's potential benefits and challenges for education and the ethical and social issues that AI raises. The article discusses the implications of these findings for educational policy and practice and suggests directions for future research.

AI integration

AI use in education is not new (O'Shea & Self, 1983); however, it has been increasingly integrated into education in New Zealand as a tool to support teaching and learning and as a topic to explore in the curriculum. The Ministry of Education has published its initial advice on using generative AI tools like ChatGPT (Ministry of Education, 2023), which can create text, images, or code based on prompts. The advice highlights these tools' potential benefits and risks, such as enhancing creativity, personalisation, and engagement and raising ethical, privacy, and quality concerns. The Ministry also provides some guidelines for educators to consider before using generative AI tools at school, such as being aware of the limitations and unreliability of these tools, avoiding using personal data or making decisions based on their outputs, and complying with age restrictions and copyright laws.

Additionally, the Ministry of Education and other organisations have been promoting AI education in New Zealand, by developing policies, resources, and learning opportunities for teachers and students (Ministry of Education, 2022). The Artificial Intelligence Researchers Association published a report in 2022 that examined the impacts of AI on New Zealand's economy and society and identified key AI opportunities for the public, private, and education sectors (Bifet et al., 2021). The report also recommended that AI education should be embedded in the curriculum from an early age to prepare

students for the future workforce and society. Furthermore, some teachers and schools have been experimenting with AI tools and projects in their classrooms, such as using ChatGPT to generate text for different learning areas or approaches (Bozkurt et al., 2023).

Equity, Inclusion and Pedagogy

However, the integration of technology presents challenges. The digital divide has been well cited as a negative outcome when integrating digital tools (Wenmoth, 2021). This has not only be exacerbated by the COVID-19 pandemic (Parsons et al., 2022), but also through a new level of digital literacy required to understand and apply AI tools. Particularly to support equity, inclusion and effective pedagogy.

In this study equity refers to the fair and just distribution of educational opportunities and outcomes for all learners, regardless of their backgrounds, abilities, or needs – particularly in line with Te Tiriti o Waitangi and the participation principle. AI can support equity in education by providing personalised and adaptive learning experiences, enhancing access to quality education for marginalised and underrepresented groups, and reducing barriers to participation and achievement (Bojorquez & Martínez Vega, 2023). For example, AI could enable learners to access content in their preferred languages or formats, and provide feedback and guidance based on their individual progress and goals related to pedagogical theories. A current examples of how AI initiatives aim to promote equity in education are UNESCO's K-12 AI curricula, which seek to empower learners with the knowledge and skills to use and create AI solutions for social good (UNESCO, 2022).

Inclusion is the process of ensuring that all learners feel valued, respected, and supported in their learning communities, and that they can participate fully and meaningfully in educational activities (Attwood et al., 2019), in particular supporting neuro-diverse learners. AI can support inclusion in education by fostering a culture of diversity, equity, and belonging, enhancing intercultural understanding and dialogue, and facilitating collaboration and co-creation among learners. AI can enable learners to access diverse perspectives and sources of knowledge, engage in cross-cultural exchanges and interactions, and contribute to global issues and challenges (Khan, 2022). AI also has the potential to help teachers and educators to create inclusive curricula and pedagogies, recognise and celebrate diversity in learning styles and preferences, and facilitate group work and peer feedback.

The art and science of teaching and learning, or pedagogy, refers to the design, implementation, and evaluation of educational activities that facilitate learning outcomes. AI can transform pedagogy by enabling new forms of teaching and learning that are more learner-centred, data-driven, collaborative, creative, and lifelong (Grubaugh et al., 2023). With AI, learners to take charge of their own learning journeys, access real-time data and feedback on their performance and progress, collaborate with AI peers and mentors across different contexts and domains, create innovative solutions for complex problems, and continuously update their knowledge and skills. AI can also assist teachers in facilitating different pedagogical approaches, such as flipped learning.

Methodology

Through conversations with colleagues, peers and other educators the authors identified that there were examples of AI integration that could support the effective application of AI in education, however this practice was evolving in silos, or not evolving at all. This challenge was met by the creation

of an open CoP that focussed on how AI could be applied in practice. Effective CoPs support participation through a range of methods (Wenger-Trayner et al., 2023), therefore there were several channels to participate in with the aim of building collective knowledge. There was an internal Slack group formed within the academyEX student workspace, this had 107 members. There were also two face-to-face open forums with between 28 to 45 participants, which aimed to cover some of the basics of AI in education, as well as an opportunity for discussion on how it was being applied in education. From these meetings it was identified that there was a need for more frequent opportunities to share, and this was arranged once a fortnight online via a Zoom call. All current academyEX students were invited, and this evolved into a central steering group in supporting the research. The discussions within the wider CoP identified themes around inclusion, equity and pedagogy and these were the basis of a co-constructed survey which aimed to discover a broader representation of these evolving themes on AI in education. Feedback from the CoP, recent literature, and input from generative AI supported refinement of the survey questions. The draft questions for the survey were shared again within the CoP for feedback and approval. The survey was distributed to educators in New Zealand via the academyEX Slack platform, LinkedIn and the Facebook: AI in New Zealand Education group. The emerging results were also shared at Tātai Aho Rau uLearn 23 and participants had opportunities to discuss the themes and complete the survey. The project was approved via IRB.

Data analysis

114 educators completed the survey and following data cleaning there were 89 relevant responses. The survey participants reflected the demographic characteristics of educators in New Zealand with the majority being female, 45-54 years old and European/Pākehā. A substantial proportion of respondents reported uncertainty or low frequency in staff and student use of AI tools both at school and home. This highlights a potential gap in AI integration in learning environments. Professional learning development (PLD) in AI appears to be infrequent among staff, with a majority never having had PLD on AI, suggesting a need for more comprehensive training and resources – most schools also had no policy to support teachers or students to implement AI tools. Ranking questions in the survey highlighted that educators in New Zealand prioritise AI initiatives that support culturally sustaining pedagogies and the revitalisation of Te Reo. They recognize AI's potential to enhance inclusive and effective learning with individual education plans. However, they caution against over-reliance on AI and stress the need for careful implementation, teacher involvement, and ethical guidelines.

Conclusions

Artificial intelligence (AI) has the potential to address some of the biggest challenges in education today, such as equity, inclusion, quality, and access. However, AI also poses ethical and social risks, such as bias, discrimination, and privacy breaches. There is slow AI adoption in NZ's educational sector, and varied levels of engagement and awareness among educators. Further research and development of AI tools are needed to align with learners' values and needs.

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About the presenters

Based in Gisborne, Tim Gander has over a decade of experience working with educators to solve practice-based challenges across Aotearoa. He has worked with The Mind Lab on the PGCert in Digital and Collaborative Learning, Master of Teaching and Education Leadership and the Master of Contemporary Education. With a teaching background, Tim brings practical knowledge and expertise to his engaging presentations on education and leadership. He is completing a PhD that focuses on using BIE coaching as a collaborative tool to enable more transparent communication, goal-setting, and opportunities to create hybrid spaces. Tim hosts the 'Impact Series' podcast with Tech Futures Lab and is also the founder and editor-in-chief of the academic, peer-reviewed journal He Rourou.

Born in Northland but raised in Southland and Canterbury, Brendon Shaw (Ngā Puhi) currently works as team-leader for Māori bi-lingual classes at his South Auckland primary school. After 15 years teaching abroad in Asia and Latin America, Brendon returned to Aotearoa to teach in his home country and re-connect with Māori culture and language. His Master's project is centred around Place Based Learning and his research interests tend to focus on Te Reo Māori in the classroom, as well as improving engagement between schools and mana whenua.

Resources

Link to presentation slides

From Stuck to Success: Navigating Through Procrastination in Study

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

Paula Gair
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Introduction

Procrastination and stress are common issues that students face while studying. This presentation aims to introduce tools and strategies to help students overcome these issues and is based on evidence and successful interventions supporting students on their MTF journey over the past 5 years.

The presentation will cover the following three aspects of this topic:

1. Understanding procrastination and stress: starting with a conceptual review of why context matters[1].

2. Factors explaining academic procrastination: we will explore the factors that explain academic procrastination including cognitive and affective factors[6], and illustrate how increased stress is a consequence of academic procrastination. [3].

3. Tools and strategies to overcome procrastination and stress: The presentation will introduce practical tools and strategies to overcome procrastination and stress. These include:

- Procrastination reduction techniques: Techniques to reduce procrastination, such as the Pomodoro technique, which involves working for 25 minutes and taking a 5-minute break[6].
- Goal setting: Tips on how to set achievable goals and how to stay motivated.
- Time management - how to manage time effectively, such as setting realistic goals, breaking tasks into smaller chunks, and prioritizing tasks.

The following will also be briefly discussed;

- Self-compassion - how self-compassion can help reduce procrastination and stress[2][5].
- Mindfulness - how mindfulness can help reduce stress and increase focus.

4. Conclusion: The presentation will conclude with the sharing of resources and time to complete your own action plan.

In conclusion, this presentation aims to provide students with practical tools and strategies to overcome procrastination and stress related to studying. The hypothesis is that by understanding the factors that contribute to procrastination and stress and by implementing the tools and strategies provided, students can improve their academic performance and reduce stress.

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About the presenter

Paula Gair had a successful career working for, then consulting to, international Not For Profits in their early digital transformations (including fundraising, marketing, communications and organisational development) working and living around the world for more than 15 years (Japan, Argentina, Brazil, Chile, Mexico, Canada, USA, UK and the Netherlands) before returning to NZ in 2011.She was the first student to enroll in the Master of Technological Futures programme at TFL in 2017 where she successfully completed a project that focused on cyber security risks and mitigation for a non technical audience (primarily families). This research project was the genesis of www.deriskme.com – a cyber security, online safety and privacy start up that focuses on actionable solutions for families and schools.At Tech Futures Lab Paula advises current Masters Students; including ensuring Privacy by Design and Security by Design are included in project planning.Paula is a frequent speaker and commentator on Privacy, Cyber Security and Online Safety.She is also actively engaged in the NZ cyber security ecosystem; advocating safer defaults and nudges for citizens which would result in improved personal cyber security, online safety and privacy outcomes for all New Zealanders. She is equally passionate about seeing more girls study STEAM subjects and more women working in tech.

LinkedIn Profile

Resources

Link to slides

Accelerating New Zealand C-Suite Leaders Ambition to Achieve Sustainability Goals

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

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Research Summary

The importance of keeping the planet's rising temperature below 1.5°C is now no longer in dispute, and governments and companies are all very much aware of the need to make changes in support of this. Large corporates are the greatest contributors to global warming. The science shows if they are able to achieve net zero carbon emissions we have the opportunity to keep temperatures below 1.5°C. But unfortunately New Zealand large corporates have been slow to set targets and create momentum behind finding innovative solutions to reduce emissions. We are running out of time. If companies do not accelerate efforts we will reach the climate change tipping point where impacts of rising temperature on the planet will be irreversible. This research has sought to provide insights into why New Zealand business leaders in large New Zealand companies have been slow to set and pursue sustainability goals in line with the Paris Agreement target. What are the behaviours and influences on that behaviour that has resulted in poor progress in New Zealand? And how might we change this behaviour to achieve accelerated achievement of net zero carbon emissions? The research uncovered that New Zealand's maturity in this space is very immature compared to Denmark, a country with very similar characteristics as us, but are a global leader in business sustainability. In this presentation Tania will share insights to the question:

How different are New Zealand c-suite leaders in how they operate in comparison to leaders in Denmark, a country that is ranked as the number one country for sustainability? And how these insights will affect the next phase of research to uncover an effective solution to affect change.

Designing for cultural belonging by thinking like a whānau

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

Lilly Bartlett
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Research Summary

I wasn't entirely sure what I wanted to achieve when I started my Masters, I just knew there was a problem that upon closer inspection turned out to be more complex than anticipated. During my post-grad studies, I trialled an initiative inspired by business leader and digital assets investor Maya Vujinovic's (2018) thought piece *Cryptocurrency isn't reinventing money: It's reinventing value.* Here Vujinovic questions what is it we value and how could we give value another set of meanings.

In Horizons charitable trust, we discovered the scholarships we hoped would remove barriers to participation undervalued our mahi. Whanau rarely applied for the funds or failed to meet scholarship requirements. In testing value reinvention we trialed an offer of koha. Whānau would give service or an act of kindness to participate in club basketball and clinics. It was a promising start with families eager to take up the opportunity but again, not holding up their end of the bargain. While complaining to my close friend Peter Dolan he spurred me on suggesting I evaluate whanau access to tools and ongoing measures of support. His council brought me back on track reminding me the problem lay in the, not the people.

In my early stages of ideation, I began to scrutinise value restoration by identifying significant points of diminished value in the value chain of people. Questioning, what wasn't being exchanged or valued to understand where value creation was being stifled. Horizons' vision aspired to connect communities through youth-focused pathways of engagement and attainment. Inspiring value creation through our culture and values-based basketball offerings. However, despite our impact, rangatahi Māori were seeking high school opportunities outside of the region.

Even for us, the reality was that despite my husband's career as a Tall Black, National Coach and International player we had to send our son to the Waikato to thrive. However, unexpectedly my Dad passed and our son returned home. During his tangihangi, I observed his(our) people returned to him and to us. Though I was astonished by the young men from my son's school basketball team who came to Waikato University marae to tautoko. It was from this feeling that I became curious about their expression of relationality and culture.

In context, we know Hawkes Bay has more Māori than the national average and more people in the more deprived sections of the population. Participation in physical activity is dropping in NZ and across the globe. However, basketball is reported as the fastest-growing secondary school sport and the Tertiary Education Commission statistics show that sportsperson is the number one career aspiration for rangatahi between ages 7 - 13. We felt and knew we had a vehicle for connection with our youth. Our mahi became urgent in the knowledge that by 2040 52% of the population would be Māori and

Pacifica. What were we doing now to speak into our rangatahi that they are our future doctors, future lawyers, and our future full stop?

In response, my study explored the cultural narratives of the mothers who had sent their sons away for school and basketball. I interviewed 5 women using a novel kaupapa Māori methodology Korikori korero or walking talking interviews where my participants decided in which environment our conversations would take place. The method aims to share power within the research relationship. Empowering women to share their korero of navigating their lived experiences through physical activity. The interviews took place in late 2022 capturing the essence of our korero at that time.

On February 5th Cyclone Gabrielle devastated the landscapes within Hawkes Bay. In her wake leaving whanau homeless, and home-less. Such was the damage that we became isolated from the country, without power and in severe cases dependant on community shelter. A region thrust into perpetual survival mode. Damaged infrastructure restricted travel and anxious families reconsidered their recreational pursuits. Our basketball association was revealed to be fraudulent, fees raised 300%, venues became unavailable to house civil defence, and the carefully considered ecosystem I had mapped out was an unsalvagable wreckage.

Under these conditions, I began to question how then could systems thinking be applied when the only thing left to leverage was our thinking within the system. What to was the point and reasoning behind moving whanau from one thoughtful framework to another? If through my research endeavours I was having a change of heart how then was I assuming to crown myself as a change-maker when the only change was in me? While in the back of my mind, a nagging feeling drove me.

I presented at the International Indigenous Research Conference in November 2022. How was I being pono to my own ideas of seeking value creation and intersections between systems thinking and matauranga-hapori. I became discouraged about the realities of frameworks and systems flexible and portable enough to meet people where they are. Wondering are we building systems and then adding people. What then could the antidote look like?

In the eleventh hour I attended a Deep Dive session with Susie Wise where she spoke about her book Designing for belonging. It was then I was able to step back from the tapestry of my research and name this feeling of belonging, unbelonging, and othering. Inspired, I landed on the concept of Designing Cultural Belonging by thinking like a whanau. Understanding that whanau show up, are collective changemakers, and know how they belong. Reaching an intersection that seeks to bridge identities of language and culture.

My research started with a feeling. A feeling of injustice, of something lost, of something broken that needed to be brought into the light. As drivers of political social impact, we had disrupted across levels of grassroots, management, and governance. Still, we were held at the fringes and wondered where could we find the intersections to move forward with meaningful change.

About the presenter

Born and raised in Taupō has tribal affiliation to Ngāti Tūwharetoa, Te Whānau-a-Apanui, Te Arawa, Ngāti Manawa and Ngāti Tiipa. A Research Assistant in the School of Public Health and Interdisciplinary Studies at Auckland University of Technology. Lillian has experienced first-hand how sports can empower youth and change lives and communities – she and her husband, former Tall Black Everard Bartlett set up and run Horizons Basketball Trust in Hawke's Bay. She sits on multiple boards and committees implementing youth strategies within the Hawkes Bay community. Lillian has recently submitted her Masters Research. Her research interests include conceptualising emerging disruptive technology grounded in Indigenous knowledges, restoring cultural identities in relation to health and wellbeing, and the flourishing of cultural narratives for Maori women and their families.

Enhancing ESL Learning through Blended Pedagogy and Emerging Technologies: A Krashen-Inspired Approach

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

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Introduction

In an increasingly interconnected and globalised world, the acquisition of a second language has become an indispensable asset, transcending the boundaries of cultural diversity and geographic distance. Among these languages, English reigns supreme, serving as a bridge connecting the gap between nations, businesses, and people from diverse backgrounds. For Chinese students and immigrants residing in foreign lands, mastering English is often more than a mere educational pursuit; it is a gateway to opportunities, a medium for cultural exchange, and a means to unlock the full potential of their personal and professional lives.

In this digital age, the intersection of language learning and technology presents an exciting frontier. Digital technologies have emerged as powerful tools, promising enhanced language acquisition experiences. The fusion of Krashen's principles with technological innovations ushers in a new era of language learning, one that is more accessible, adaptable, and engaging than ever before. From artificial intelligence-driven language tutors to immersive virtual environments, these advancements hold the potential to reshape how Chinese students and immigrants engage with the English language.

In this discussion, we will delve into the critical role of second language learning, particularly English, in the lives of Chinese students and immigrants living abroad. We will explore the relevance of Stephen Krashen's language acquisition theory and its synergy with disruptive technologies, shedding light on the transformative possibilities that this marriage of theory and technology holds for the future of language education in an increasingly interconnected world.

Research Questions

How can a blended ESL pedagogy be most effective through the use of technology?

Other emerging thoughts include:

- How can software design be effective in exposing students to a rich language environment involving a pedagogy of comprehensible inputs?
- How can technology assist in giving instant feedback to students while mitigating anxiety around learning?
- How, when and where is grammar structure best placed in a pedagogy involving software design?
- How can technology assist in creating meaningful subconscious language acquiring experiences

- How can technology optimise outcomes of spoken ability using a comprehensible input pedagogy?
- How should the database planning be structured to personalise and customise language learning to meet students' learning needs?
- How can emerging technologies support a blended English learning and teaching environment?

Question : How can a blended ESL pedagogy be most effective through the use of technology? Krashen's Input Hypothesis, (Krashen, S. D. (1985). The Input Hypothesis: Issues and Implications. Longman.)a cornerstone of second language acquisition theory, posits that language learning is most effective when individuals are exposed to language input that is slightly beyond their current level of competence but still comprehensible. This theory underscores the concept of "comprehensible input" in ESL pedagogy, emphasising that learners make the most progress when they are exposed to language that challenges them but remains understandable.

A blended approach in ESL pedagogy combines traditional teaching methods with technology, offering a dynamic learning experience. Technology can augment conventional classroom instruction by providing multimedia resources, interactive exercises, and real-time feedback beyond the physical classroom. This approach optimises students' exposure to authentic language by incorporating digital materials like videos, podcasts, and online forums, enabling learners to engage with language in real-world contexts.

The effectiveness of a blended ESL pedagogy through technology is rooted in its ability to create an immersive and flexible learning environment. It can cater to diverse learning styles, offers interactive engagement, and provides instant access to up-to-date content, fostering more profound language acquisition. This approach aims to harness technology's potential to bridge the gap between classroom learning and the real world, ensuring students are well-prepared for practical language use.

Sub-question 1: How can software design be effective in exposing students to a rich language environment involving a pedagogy of comprehensible inputs?

Software design plays a pivotal role in creating immersive language environments that facilitate comprehensible input in language pedagogy. Technology can transform language learning by offering a diverse array of multimedia resources and interactive tools that cater to individual learning needs. For instance, language learning applications and platforms like Duolingo, Rosetta Stone, and Babbel leverage gamification, interactive exercises, and adaptive algorithms to provide students with comprehensible input. These platforms offer lessons that adapt to a student's proficiency level, gradually introducing more complex language structures and vocabulary while ensuring the content remains understandable. In my research, I aim to also include language learning software that engages students effectively by incorporating elements like contextual learning, multimedia-rich content, and real-time feedback, through interactive exercises, quizzes, and simulations that provide opportunities for practical language use. Additionally, the integration of speech recognition technology allows students to practice pronunciation and conversational skills, enhancing their language proficiency. In essence, software design is pivotal in crafting a language environment that exposes students to rich, comprehensible input. When thoughtfully developed, these tools have potential to create engaging, dynamic, and effective language learning experiences, fostering better language acquisition and proficiency.

Sub-question 2: How can technology assist in giving instant feedback to students while mitigating anxiety around learning?

Technology, particularly the application of artificial intelligence (AI) and natural language processing (NLP), is revolutionising language learning by offering instantaneous feedback to students while simultaneously mitigating anxiety associated with the learning process. AI-powered language learning platforms, such as Grammarly and language exchange apps, use NLP algorithms to analyse and provide real-time feedback on a student's writing, speaking, and comprehension. This immediate feedback helps learners identify and correct mistakes, fostering a sense of accomplishment and reducing the anxiety often associated with language errors. Language learning anxiety can stem from fear of making mistakes in front of others or being judged for imperfect language skills. Technology alleviates this anxiety by providing a private and non-judgmental space for practice. Virtual environments, chatbots, and speech recognition technologies offer students opportunities to practice without the fear of social repercussions, enabling them to build confidence and fluency at their own pace. By incorporating AI and NLP in the platform's design, I anticipate student's to benefit from instant feedback and a low-stress learning environment, to reduce language learning anxiety and enhance the effectiveness of the language acquistion.

Sub-question 3: How, when, and where is grammar structure best placed in a pedagogy involving software design?

Krashen's stance on grammar acquisition, in line with his Input Hypothesis, emphasises the importance of exposing learners to comprehensible input rather than explicit grammar instruction. He contends that grammar is acquired more naturally when learners are immersed in meaningful language contexts. In this research, I will explore how, when, and where to introduce grammar instruction in a contextual and just-in-time manner via the technology-based language learning platform. Instead of formal grammar lessons, software can introduce grammar rules when learners encounter them naturally in reading, listening, or speaking activities. This approach aligns with Krashen's views by incorporating grammar organically into language use, making it more relevant and comprehensible. The advantage of technology in this regard is its ability to correct students subtly and without causing anxiety or rebellious feelings. Grammar errors can be highlighted and corrected within the context of a sentence or conversation, providing immediate, non-intrusive feedback. This "subconscious" correction allows learners to focus on the meaning and flow of their communication rather than fixating on mistakes, promoting a more natural and less anxiety-inducing language learning experience.

Sub-question 4: How can technology assist in creating meaningful subconscious language acquiring experiences?

Technology can play a pivotal role in creating meaningful subconscious language acquisition experiences by aligning with Stephen Krashen's theory of "acquisition" over "learning." According to Krashen,(Krashen, S. D. (1985). The Input Hypothesis: Issues and Implications. Longman.) "acquisition" refers to the subconscious, intuitive process of language assimilation through exposure to comprehensible input, while "learning" involves conscious, rule-based language knowledge. In this research I aim to explore how technology can promote language acquisition through immersive and authentic experiences.

Language learning apps, virtual reality platforms, and language exchange forums offer opportunities for learners to engage with language in a real-world context. For instance, virtual environments enable users to converse with AI-driven characters or native speakers, providing a natural and immersive language experience. Additionally, technology can expose learners to authentic materials like news articles, podcasts, and films, allowing them to absorb language naturally, without overemphasising grammar rules. This approach aligns with Krashen's view that language acquisition occurs best when the focus is on meaning and communication, not on explicit grammar instruction. Incorporating technology in this manner creates a dynamic, immersive, and subconscious language acquisition environment, where learners can engage with language authentically, mirroring the way they learned their native language as children.

Sub-question 5: How can technology optimise outcomes of spoken ability using a comprehensible input pedagogy?

In this research I will explore how technology can significantly enhance spoken language ability through a comprehensible input pedagogy. This will include optimising a range of technologies including:

- Voice Recognition Technology: Voice recognition software, like that used in language learning apps such as Duolingo and Rosetta Stone, plays a crucial role in refining spoken language skills. It allows learners to practice pronunciation and receive instant feedback on their spoken language. This immediate feedback is invaluable for honing accurate pronunciation and fluency.
- Language Learning Apps: Many language learning apps, such as Babbel and Liulishuo, focus on improving spoken ability. These apps offer interactive speaking exercises, conversation practice, and real-time assessments. Students can engage in meaningful dialogues, promoting comprehension and expression.
- Immediate Pronunciation Feedback: Immediate feedback on pronunciation helps learners correct errors and refine their speaking skills. This real-time guidance ensures that students are consistently exposed to comprehensible input in terms of pronunciation, which is critical for effective language acquisition.
- Multi-Accent Virtual Environment: Technology allows for the creation of virtual language environments with multiple accents, mirroring the diversity of English speakers around the world. This exposure to various accents enhances learners' listening comprehension and adaptability in real-life conversations.
- Chatbots for Personalization: Language learning technology can provide a plethora of chatbots serving as tutors tailored for personalisation and customisation. These AI-driven tutors adapt to individual learning needs, offering targeted guidance and practice, thereby optimising spoken language outcomes.

By optimising voice recognition, language learning apps, instant feedback, diverse accents, and AI-driven chatbots, the platform being developed in this study will better serve a comprehensible input pedagogy, making language acquisition more engaging, personalised, and effective.

Sub-question 6: How should the database planning be structured to personalise and customise language learning to meet students' learning needs?

To structure database planning for personalized and customised language learning, it's essential to leverage big data and analytics. I propose this can be achieved in the following ways:

- Use of Big Data and Analytics: Collect and analyse a vast amount of data on students' language learning patterns, preferences, strengths, and weaknesses. This data can encompass their language proficiency, learning style, progress, and even personal interests. By harnessing big data and analytics, educators and technology platforms can gain insights into each student's unique learning journey.
- Personalized Learning Paths: Tailor language learning experiences by creating individualised learning paths based on the data accumulated. With these customised paths, students can work at their own pace, focusing on areas that need improvement and align their learning with their interests and goals. Personalisation enhances motivation and engagement by making the learning experience relevant and achievable.
- Data Structure and Machine Learning: A well-designed data structure should allow for efficient data collection, storage, and retrieval. Machine learning algorithms can then process this data to generate actionable insights and recommendations. These algorithms, driven by artificial intelligence, can predict what content, exercises, or learning activities will benefit each student the most.

Incorporating big data, analytics, personalised learning paths, and machine learning into database planning is key to optimising language learning. It has the potential to transform language education from a one-size-fits-all approach to a dynamic and adaptable system that caters to each student's unique needs, enhancing both learning outcomes and overall satisfaction.

Sub-question 7: How can emerging technologies support a blended English learning and teaching environment?

Emerging technologies, such as blockchain, metaverse technology, AR (Augmented Reality), VR (Virtual Reality), and "naked eye effects" (likely a reference to immersive technologies), hold immense potential in shaping the future of blended English learning and teaching environments. I will be exploring each of these in the following ways:

- Blockchain for Credentials and Accountability: Blockchain can be used to securely store and verify credentials, such as certificates and language proficiency levels. This enhances transparency and trust, particularly in online learning environments, where credential authenticity can be a concern.
- Metaverse Technology: Metaverse platforms offer immersive, 3D, and interactive environments where learners can engage with English in real-life scenarios. This creates authentic language exposure and opportunities for practical use, making language learning more engaging and effective.
- AR and VR: Augmented and Virtual Reality can transport learners to English-speaking environments, enabling them to practice and experience the language in situ. This technology can simulate travel, business meetings, and other real-world scenarios, enhancing language acquisition.

- "Naked Eye Effects" (Immersive Technologies): Immersive technologies can provide a sensory-rich learning experience. Learners can interact with English content and environments as if they were physically present, fostering deep language immersion.

The implications of these emerging technologies on language learning and teaching are profound. They offer unparalleled opportunities for engagement, authenticity, and interactivity. Blending these technologies with traditional teaching methods creates dynamic, versatile, and effective English learning environments. It is anticipated that learners will benefit from exposure to real-world language usage and situations, leading to improved language proficiency and confidence in communication. Moreover, educators have the tools to create innovative, personalised, and effective language instruction.

Conclusion

To unlock the full potential of ESL learning, it will be beneficial to integrate Krashen's theory with the emerging technologies discussed here. This synthesis enhances language acquisition, making it more relevant, engaging, and effective. There is potential for technology to play a pivotal role in providing comprehensible input, as per Krashen's theory, by facilitating immersive, authentic language experiences, enhancing spoken ability, and reducing anxiety related to learning. Technology can also offer immediate feedback, enables personalised learning paths , through big data and analytics. These aspects have potential to improve engagement, motivation, and ultimately language proficiency. Emerging technologies like blockchain, metaverse platforms, AR, VR, and immersive technologies redefine the English learning landscape, offering authentic experiences and enhancing language immersion. Furthermore, the evolving nature of technology necessitates continuous research and innovation. As we advance, exploring how these tools can be optimally harnessed for language education remains imperative. Our journey into the fusion of Krashen's theory and emerging technologies has only just begun, and the future is full of exciting possibilities for ESL learning and teaching.

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About the author

With nearly two decades of experience in the field of educational training and a background as a dedicated research scholar, my passion lies at the intersection of language learning in China and computer-aided learning. During my time as a Director of Shandong Education & Examination Services, I played a pivotal role in implementing and promoting international education cooperation programs. I am driven by a strong desire to contribute to the world of education and to witness the growth of others.

While serving as the Director of Shandong Provincial Education and Examination Services, I not only initiated several collaborative programs with universities in Europe and Australia but also successfully managed and promoted these initiatives within Shandong province. My leadership skills allowed me to forge valuable connections with high schools, and I built a highly effective team of professionals skilled in marketing, promotion, consulting, and program implementation. I oversaw program planning, design, and a wide range of activities.

I'm not just an administrator; I'm a teacher and mentor. Whether I'm advising parents and students or leading a team, I find immense satisfaction in training young individuals to overcome language barriers through innovative teaching methods. In a blended learning environment, I engage my students in singing, performing, repeating, and retelling to enhance their English language skills.

In 2002, I was honoured with a national scholarship that enabled me to become a visiting scholar at Monash University's Computing Education Research Group (CERG) in Australia. This experience was transformative, allowing me to participate in numerous seminars and workshops focused on online teaching and learning methodologies. I also delved into research projects that compared online teaching traditional face-to-face methods, covering web-based programming, questionnaire design, interviews, and student discussions. This one-year immersion in a multicultural environment at Monash broadened my horizons and provided insights into cutting edge research projects alongside exceptional colleagues from around the world. With a rich background in management, a deep understanding of teamwork dynamics, and extensive research experience in language learning pedagogy, I am fully committed to making a positive impact in the world of education, especially for the synergy of Second Language Learning and Emerging Disruptive technology . The growth and development of young individuals fuels my enthusiasm for this remarkable field.

Increasing technology adoption in small businesses in Gisborne

Research Presentation

academyEX Converge Research Symposium, 24th November 2023

Maria Abercrombie

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Introduction

Technology has increased productivity, sped up economic growth, made it possible to share knowledge and information, and increased access to essential services, among other things. However, it has also been the cause of inequalities and digital divide. (Inequality in Asia and the Pacific in the Era of the 2030 Agenda for Sustainable Development, n.d.).

The central research question addressed is: "How might we increase the usage of digital technology in small Gisborne-based businesses that are currently not utilising other available initiatives or are resistant to adopting technology?" To date, there have been in-depth interviews with 17 participants, and several key themes emerged.

Context

Technology has become a vital tool in modern society, enabling us to communicate efficiently, access information, and conduct business.

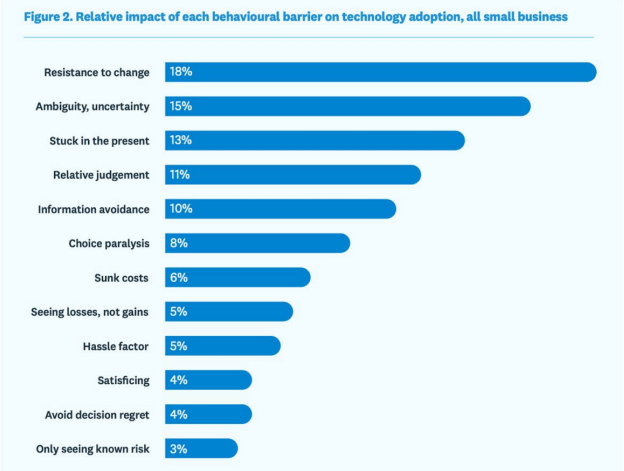
After moving from Auckland to Gisborne, I noticed a significant difference between the cities, not regarding the population or big city centres, but how most businesses are conducted. I was perplexed when I realised most businesses still need a website, most cafes and restaurants don't use "payWave", and the overall sense that we are living a few years behind.

Unfortunately, Gisborne has low socioeconomic stats, which seems to correlate with the technology adoption for small businesses in the area.

In my interviews with Malcolm from Trust Tairawhiti, he did mention these. He identified in their last survey that at least 8% of the population in Gisborne doesn't have internet access. He also said that even if they have access to the internet and a device, we have a lot more vulnerable people, which leads to some extent businesses not wanting to go "too digital" because it will cut some of their customers.

When researching about what are the main barriers preventing small businesses worldwide from adopting technology, I came across a fantastic study from One Step, which surveyed over 4,200 small business owners in six countries (Australia, New Zealand, the UK, the United States, Canada, and Singapore) to identify the main barriers hindering small business digital adoption.

In this study, Xero identified three key mindsets that are common amongst the thinking of small business owners across the world. See some of the mindset in the image below.



The following behavioural barriers showed up in my interviews in the Gisborne context:

Sunk costs,

Avoid decision regret,

Stuck in the present,

Satisficing, and;

Choice paralysis.

However, none of them was a key theme in my interviews. Showing how important it is to treat this problem with different lenses than in an overall and not specific way.

Research questions & sub-questions

Question: How might we increase the usage of digital technology in small Gisborne-based businesses that are currently not utilising other available initiatives or are resistant to adopting technology?

Subquestions:

What are the main barriers preventing small businesses in Gisborne from adopting digital technology?

What tools exist to introduce and educate small businesses regarding emerging technologies?

What tools are currently working and improving technology adoption in local small businesses in Gisborne?

How can we address the concerns and challenges that business owners in Gisborne may face in adopting new technologies?

What metrics can I use to measure the success of technology adoption efforts in Gisborne after this project?

Aim and objectives of the project

This project aims to increase technology adoption in small businesses in Gisborne. My hypothesis is that if the small companies in the region are embracing technology, we could raise our standards, attracting and keeping talent and increasing the overall health and well-being of the community to change our current socioeconomic stats to a higher and better outcome.

Hopefully, by the end of this project, we have something that we can replicate in all parts of the country and have New Zealand at the forefront of cutting-edge tech.

Method

I chose interviews as my primary method for collecting data for my project because I knew I had to listen well to the community. I assumed I wouldn't have the answers, and I knew we had to treat it differently than more prominent cities. I also had to go into this part of the project with an open heart.

However, I wanted to know what was expected from the rest of the country and the world. Therefore, the other approach was to do a literature review for the other data I needed to collect to answer my questions and sub-questions.

My interviews were semi-structured. With my questions and sub-questions, I analysed the data I had to collect to answer them.

Data collection

I planned to select the businesses, contact them, and set the interview dates to achieve my goals. After talking to Matt from Toro Technology for assessment one, I knew that I would have to rely on my networking. I had a few people in mind whom I knew I had to talk to and who could help me contact businesses.

I made Google Sheets and researched the companies wanting to classify them into the categories below. The goal was to email people to set up interviews.

- To help me classify the businesses, I did some research on the businesses, such as:
- Did they have a website?
- Did they have social media?
- What else could I find online that would be helpful to classify them into business with or without websites and agencies?

I made a list of some of the companies that I wanted to interview (they were all classified in the 3rd category, agencies):

- Digital Boost
- Trust Tairāwhiti
- Mesh Technology Solutions Ltd
- Tai Tech
- Tolaga Bay Innovation

The first email approaching them was super personal, usually mentioning someone who introduced them to me and explaining more about my research. However, people weren't getting back to me.

To help me classify the businesses, I did some research on the businesses, such as:

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*The central theme that emerged from my interviews was the critical role of **community** and collaboration in the success and adoption of technology among small businesses in the Gisborne region.*

Since moving to Gisborne, I have learned the community uses Facebook a lot. They prefer communicating on FB Messenger as well.

With help from Chat GPT to help me craft my message, I wrote a post and posted it on my Facebook page. To be clear, Chat GPT helped me with the hook and adding the emojis (mostly).

Posting a message on Facebook helped me to get traction, and I started setting up interviews. After this, I let go of my Google Sheets and only used Facebook.

When in the meetings, I took the time to explain to them how I was going to use the data, talked to them about the consent form to make sure they understood it and if they were happy with what they signed, and with all the participant's permission, I recorded the interviews. All the participants were happy with me recording the interviews.

I used Otter and Chat CPT for transcribing the conversations, and it helped me to summarise them. Then, I reviewed the interview transcriptions, highlighting with different colours parts of the conversation to analyse the themes. I made comments and notes to myself in Notion about what parts of the conversation I could use for each theme.

Findings & Themes

The central theme that emerged from my interviews was the critical role of **community** and collaboration in the success and adoption of technology among small businesses in the Gisborne region.

The key themes of my findings are:

Local community and collaboration,

Trust,

Time and resources,

Customer resistance, and;

Awareness and education.

Out of the 17 interviews, 15 participants highlighted the importance of **community** in various capacities. Notably, the two exceptions, Nick from SwayTech and Tim from Digital Boost, were not from the Gisborne region and did not have a connection to the local community.

The small businesses that embraced technology consistently referenced their reliance on a supportive network. The community provided them space for regular interaction, mutual assistance, and a sense of belonging. In contrast, those hesitant to adopt technology expressed a lack of such support systems, often prompting apprehension and reluctance towards technological advancements. For instance:

Katie, owner of Bubble Wrap Fun, exemplified the benefits of a robust network of like-minded business owners.

Jacopo, associated with Tāiki e!, epitomised the positive impact of a collaborative environment.

Gretchen's involvement in Ask Alice Academy further emphasised the transformative potential of community-driven initiatives.

The theme of trust emerges in the interviews.

Cate from King Bees emphasised the value of friendships within the business community, underscoring how regular interactions and shared experiences contribute to business growth and success.

The theme of **trust** emerges in the interviews. Cairn's perspective underscores a critical issue - the disconnect between government initiatives and the community, leading to a lack of trust and receptivity. He emphasises the importance of community-driven initiatives, like the Haututu Hacklab, in fostering trust and openness towards emerging technologies.

Several interviewees echoed Cairn's sentiments. Alice from Ask Alice pointed out that a significant barrier to technology adoption is the challenge of discerning what to trust and who to turn to for guidance. Trish's unfortunate experience further exemplifies the consequences of misplaced trust.

The next theme the interviews consistently revealed was the perceived constraints of time and resources. This was particularly evident in Raquel's approach, who expressed difficulty setting aside specific time for technology implementation due to the day-to-day demands.

Trish from MediTrain shared similar sentiments, citing a busy schedule as a reason she is not improving internal processes through technology, even though she acknowledged its benefits.

The last theme is awareness and education.

Both Brendon and Raquel's reluctance towards online booking systems reveals a similar underlying concern about perceived customer resistance. They emphasise the bespoke nature of their services, suggesting that clients may struggle to articulate their needs through an online booking interface accurately.

This sentiment was evident in Malcolm's insights from Trust Tairawhiti. He highlighted the concern some businesses have about going "too digital," fearing that their customers, who may have lower digital literacy or access, would face challenges in engaging with them online.

The last theme is awareness and education. To foster tech-driven economic growth in Gisborne, increasing awareness of the potential of technology-related jobs is seen as paramount.

Phil's efforts in upskilling individuals for tech roles with Dev Academy have shown success, although with limited opportunities within the region. This highlights a broader need for the establishment and growth of tech startups and businesses in Gisborne to create a sustainable ecosystem that supports both technology adoption and job creation.

Gareth from Traktion emphasises the importance of ongoing training and support, signalling a need for continuous education and resources to facilitate successful technology integration in small businesses.

Conclusion

Many great local people understand the importance of increasing technology adoption in Gisborne and working towards this goal in different ways and areas. It's clear after this research that we are in a unique region with incredible talents and many resources.

It's also clear to me that we have to work together and embrace what makes us unique. We can not tackle the problem with "Auckland" and bigger cities.

The next step for this research is to work on solutions that could benefit the region and gather feedback before going to market. There is a long way to go to achieve the research goal, but understanding how Gisborne is different and what sets us apart is critical to achieving it successfully.

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About the presenter

Maria Abercrombie's passion for technology and community development began in Brazil, where she worked with an NGO to upscale local communities. Moving to New Zealand, she expanded her skills in sales and marketing before transitioning to the tech industry in 2017, focusing on consulting in AI for a SaaS company. Now based in Gisborne, Maria's diverse experiences have fuelled her determination to bridge technological gaps in the region, starting with small business. Her master's research is dedicated to creating inclusive and sustainable tech opportunities, leveraging her extensive background to foster societal advancement through technology

Lālanga, Māori & Pasifika Digital Equity Education

Research Presentation

academyEX Converge Research Symposium, 24th November 2023

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Introduction

In 2021 both Lesieli and Daniel embarked on research journeys to better understand the problems impacting Māori and Pasifika success in education. Māori and Pasifika have been overrepresented in statistics relating to poor educational outcomes and, by focusing on different perspectives of the problem, they decided to use research to help us better explore and understand the issues relating to success for Pasifka and Māori.

In this research presentation we present the combination of our two research projects, and the impact of this on Māori and Pasifika education.

Question 1: "How does the implementation of the Lālanga ToolBox, a culturally relevant and innovative solution, in decile 1 South Auckland primary schools impact Māori and Pasifika student success: Attendance, engagement, wellbeing, and achievement?"

In this study, I am driven to explore the critical areas of student success, with a special focus on Māori and Pasifika students in New Zealand. My research methodology combines literature reviews, research, interviews, talanoa, observations, and meaningful engagement with stakeholders, including students, educators, and school leaders, to ensure a comprehensive and well-informed exploration of the subject. I explore the current measures and definitions of student success in the New Zealand context. Embracing diverse perspectives through talanoa, anonymous interviews, surveys, and observations, I am committed to enriching the research with authentic and varied viewpoints. Central to my investigation is understanding the intricate relationship between attendance, engagement, wellbeing, and achievement, as they collectively impact student outcomes. I aspire to identify successful outcomes for Māori and Pasifika learners, shedding light on how these important aspects leads to positive educational results. Moreover, my research explores the common barriers and challenges faced by Maori and Pasifika students, making insightful comparisons with international contexts to seek innovative approaches for fostering equitable educational opportunities. A significant highlight of my study is evaluating the impact of the Lālanga ToolBox on student success at Manurewa South Primary School. By actively engaging students, educators, and school leaders in this evaluation, I seek to gain invaluable insights into the ToolBox's effectiveness in enhancing attendance, engagement, wellbeing, and achievement. Ultimately, my research contributes to a deeper understanding of student success for Māori and Pasifika learners, championing evidence-based practices and inclusive engagement. I am dedicated to empowering

educators, and stakeholders with the comprehensive insights gained, fostering informed decision-making to advance educational equity and excellence.

Question 2: Can a sociocultural approach to encouraging engagement in future technology fields help year 9, decile 1, in a South Auckland secondary school help overcome the digital divide?

The digital divide is a stubbornly persistent reality in New Zealand. The digital divide disproportionately effects Māori and Pacific people, hampering their ability to meaningfully engage in the technology space, and contributing to the ongoing poverty cycle. A concentration of this digital divide is exhibited in South Auckland.

It is proposed that an intentionally designed sociocultural approach to teaching technology could be a mechanism to help narrow the divide. Sociocultural theory is already prevalent in New Zealand educational pedagogy, however there is a question over whether it is implemented appropriately to have the desired outcomes, particularly among those affected by the digital divide. By following examples from overseas, a sociocultural programme called Lālanga FUTURES was constructed. The programme was rolled out to four cohorts of year 9 students at Tangaroa College for terms three and four, 2022.

100% of the participating students where either full or part Māori and/or Pacific in ethnicity. After two terms of attending Lālanga FUTURES, 71.8% of the students reported that they had gained confidence interacting with technology. The programme was also voted as the students' favourite subject across the entire year for year 9 in 2022 at Tangaroa College. So, initial results seem to demonstrate the potential of a sociocultural approach, but more work is needed for this impactful solution to also be sustainable and commercially viable.

Interviews with key stakeholders in an exercise of culturally competent sense making of the data and findings has led to a series of recommendations for how education and industry can make some minor adjustments and partner together to create on-ramps to digital tech careers for Māori and Pacific Islanders that acknowledge and mitigate cultural pressure at home, promote cultural competency in workplaces to make them more attractive and help schools overcome issues with teacher shortages, teacher skill deficits and the complex social issues that are hindering learning and engagement in Māori and Pacific Island students.

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About the presenters

Lesieli is the founder and Chief Visionary Officer of Lālanga, a New Zealand-based organisation dedicated to championing the success of young Māori-Pasifika students through the Lālanga ToolBox Education Programme, Mentoring Programs, and a Technology. Inspired by her own experiences and challenges as a Pacific learner in New Zealand, Lesieli launched Lālanga's first product, the Lālanga mentoring program, in November 2020 to address the wellbeing needs of students impacted by COVID-19. Since then, Lālanga's programs have thrived, reaching over 4,500 students in 15 decile one schools in Auckland within two years. Lesieli, a proud Tongan, draws motivation from her family's struggles after migrating to New Zealand when she was four. She recently completed her Masters Research, focusing on digital solutions to enhance success for Maori-Pasifika students, driven by her determination to address truancy, wellbeing, and academic challenges. Lesieli's cultural heritage contributes to her innovative, savvy and multi passionate approach to her work.

Dan has an extensive background in Technology, research and business management. He has 20 years' experience as the Director of Unify Digital, a business he first started straight out of university undergraduate studies. As a Managing Director he has a demonstrated history of working in the information technology, software, cyber security and services industry.

Dan has been the lead designer and teacher for our Lālanga FUTURES program at Tangaroa College. FUTURES is focused on enabling Māori-Pasifika students with the technological skills they need to succeed in the future of technology. Dan recently completed his Masters research project, focusing on how we use a sociocultural approach to overcome the digital divide for Māori and Pacific Island students.

Enhancing Initial Teacher Education: Leveraging Collaborative Synchronous Coaching to Foster Triadic Collaboration and Alleviate the Theory-Practice Gap

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

Tim Gander
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Introduction

Advancements in technology have enabled a range of approaches to support preservice teacher development. This research suggests that using collaborative synchronous coaching (CSC) through Bug-in-Ear (BIE) technology, reduces the theory-practice divide by enhancing collaboration between the visiting lecturer, the mentor teacher and the preservice teacher. Three stages of research were conducted to test CSC's effectiveness in providing feedback. The study examined the concept of CSC, protocol and best practices for using CSC, and the tool's potential to establish a collaborative third space in ITE. The findings from field notes, semi-structured interviews and video observations suggest that CSC is a new coaching technique that can provide an alternative way to support collaborative pedagogical development for preservice teachers while strengthening relationships and opportunities for reciprocal learning. Educators using CSC can navigate their identities within the space more transparently, collaboratively, and constructively. The power of synchronous feedback from more than one person reframes the triadic conversation into a new paradigm.

Aims, objectives and overview of the research

This research addresses the multidimensional and widespread challenge of the theory-practice divide in initial teacher education (ITE). This is explored through two critical elements of ITE, (1) the provision of equitable access to consistently high-quality feedback and timely professional coaching to support preservice teacher development, and (2) the facilitation of the third space (Green et al., 2020) with intentional collaboration and alignment between the ITE provider and the school which the preservice teacher is placed. The ITE-specific challenges of equitable access to high-quality coaching feedback and collaborative partnerships present an opportunity to integrate technology to provide the coaching required via remote video observation tools where an expert practitioner may not be physically available.

This study stems from the researcher's dual role in co-ordinating practicum partnerships and as a visiting lecturer (VL) on a practice-based ITE programme. Experiencing the value of the differing perspectives within the triadic relationships but unable to find an effective or timely way to share knowledge with the triad of VL, preservice teacher (PST) and in-school mentor (ISM). The need to provide expert curriculum and pedagogical advice to trainee teachers in a geographically challenged country was

also amplified by COVID-19 and the government's requirement to restrict physical access to schools. A remote tool was required to unite all triad members in challenging times.

This research was developed using participatory action research in stages built on the 3-Level Evaluation Framework (Vavoula & Sharples, 2009). Stage one was a pilot study that explored the hypothesis that collaborative synchronous coaching (CSC) will enable intentionally aligned and consistent augmented VL and ISM feedback to support triadic collaboration and bridge the theory-practice divide. Stage two incorporates findings from the literature and a wider scoping review to highlight best practices in the application of CSC and, through social constructivism, explores if user-defined requirements could be met. Stage 3 explores the ability of CSC to enact concepts described in the ITE third space literature in a wider group of triads in a range of schools in New Zealand.

CSC is built on the concept of Bug-in-Ear (BIE) coaching. BIE enables a direct and discreet link to the PST. The VL or ISM can communicate in real-time, giving remote virtual feedback via video observation with a BIE device without disrupting the lesson (Horn et al., 2020; Randolph et al., 2020). Scheeler (2012) explores how BIE technology has been used to provide high-quality synchronous feedback in classrooms to enhance teaching efficacy. Research spanning the last two decades has demonstrated that BIE coaching is an effective evidence-based practice (Sinclair et al., 2020). CSC augments BIE coaching by enabling the ISM and VL to simultaneously interact with the PST remotely (figure 1) while maintaining a private backchannel, hence the collaborative element.

Research questions

Stage 1

How might CSC support triadic collaboration to bridge the theory practice divide while providing feedback in initial teacher education?

Stage 2

How might CSC assist in delivering user defined goals: Sharing tacit knowledge?

How might CSC assist in delivering user defined goals: Providing questioning feedback?

What are the best practices when using CSC?

Stage 3

How might CSC enable concepts in ITE literature relating to the third space?

Negotiating identities.

Intersection of epistemologies.

Methodology

Grounded in the Vygotskian paradigm that knowledge is social and constructed with others (DeVries, 2000) this project employed a mixed methods approach applied through participatory action research (Kemmis et al., 2014). Participatory action research can be summarised as "enquiry with people, rather than research on people" (Altrichter et al., 2002, p. 130). This is also echoed by Hodges (2014) emphasising the focus on participating in the change, rather than analysing the change. Participants in the research supported the construction of research questions and user defined requirements with regards to effective feedback. Participants were also involved with analysis of data and discussion of findings.

The participatory action research methodology was applied across the 3-Level Evaluation Framework by Vavoula & Sharples, (2009) which has been successfully used to assess mobile tools in an educational context (Koole et al., 2018).

Participants and Place

The primary participants in this study were preservice teachers on a practice based Master of Teaching and Leadership program in New Zealand. All preservice teachers in the study had been using IRIS Connect (a dedicated video reflection tool) for over a year and their schools and students have already provided informed consent to permit the use of the tool to improve teaching practice. An invitation was sent to all 64 second year preservice teachers on the program to gauge the level of interest regarding participation in the study. Four triads took part in the research. Ethics were approved by the IRB.

Data collection and analysis

The data collection process followed the Micro, Meso and Macro stages, based on the 3-Level Evaluation Framework (3M) developed by Vavoula and Sharples in 2009. The M3 framework has been effectively used to evaluate mobile tools in different educational contexts (Fabian & Topping, 2019; Kabassi, 2017; Koole et al., 2018). The framework was created to address the challenges faced in assessing mobile learning, including capturing learning in different contexts, measuring mobile learning processes and outcomes, and considering the wider organisational and socio-cultural context of learning.

The 3M framework is designed to operate at three different levels, micro, medium, and macro, to aid understanding of the learning taking place in a range of contexts. The micro level examines the interaction, activity, and behavior of individual learners or actors in a learning context. The data was analysed through a participatory lens with the focus on a self-reflective collective study of practice and transformational action to improve practicum pedagogy (Kemmis et al., 2014).

Preliminary findings

The PhD is in the final stages of publication and to date a scoping review on effective BIE coaching practice has been published in the International Journal of Mentoring and Coaching in Education. The pilot study on how CSC might bridge the theory-practice divide in ITE is currently in review. The final publication of 'Flattening the power structure: Collaborative Synchronous Coaching as the third space in the practicum' is also in review.

The results of the pilot study in stage 1 demonstrate that CSC is a valid method of delivering real-time practice feedback that can support triadic collaboration. The user defined goals of 'sharing tacit knowledge' and 'providing questioning feedback' were met in stage 2. There were some tensions and challenges with CSC when used with the triads. Technical difficulties were discovered with Bluetooth connections failing and sound issues that had to be solved. There were also challenges for the ISM and VL in deciding who was providing the feedback, and when it should be provided as to not break the flow of the teaching session. Cognitive load was also a challenge for some PSTs when receiving 'questioning feedback'. This led to the development of several suggestions for best practice when using CSC. 1) Establishing roles, responsibilities and outcomes, 2) developing a seamless technology solution and 3) transparency (particularly for student participants in the classroom). When digging deeper into concepts

associated with the third space in ITE results demonstrated that CSC could aid in supporting authentic collaboration and de-hierarchising relationships to enable more effective preparation for beginning teachers. CSC promotes dialogic discourse and disrupts traditional binaries in education. Creating authentic learning communities can bridge expertise gaps and increase PST development. Observers can develop new perspectives and apply contextualised feedback in real time. Overall, this emphasises the concept of reciprocal learning nd within the Aotearoa context, 'ako'.

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About the presenter

Based in Gisborne, Tim Gander has over a decade of experience working with educators to solve practice-based challenges across Aotearoa. He has worked with The Mind Lab on the PGCert in Digital and Collaborative Learning, Master of Teaching and Education Leadership and the Master of Contemporary Education. With a teaching background, Tim brings practical knowledge and expertise to his engaging presentations on education and leadership. He is completing a PhD that focuses on using BIE coaching as a collaborative tool to enable more transparent communication, goal-setting, and opportunities to create hybrid spaces. Tim hosts the 'Impact Series' podcast with Tech Futures Lab and is also the founder and editor-in-chief of the academic, peer-reviewed journal He Rourou.

Resources

Link to presentation slides

Conceptualising a healthy media diet - Socially Fed

Research Presentation

academyEX Converge Research Symposium, 24th November 2023

Ben Marino

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'Let thy food be thy medicine and medicine be thy food' Hippocrates (400 BC)

Introduction

This paper draws on parallels between food and media consumption, to illustrate the effect on consumers, communities and society. Social media consumption is nuanced and would benefit from a sophisticated way to conceptualise this in an high impact and accessible format. Finding a parallel between Social Media consumption and consumption of food in regards to nutrition and health. The food pyramid provided a conceptualisation for food consumption and effect on nutrition, could this be reimagined for Social Media with a 'Socially Fed Pyramid'?

What is The Socially Fed Pyramid?

Drawing a parallel with the Food Pyramid, at the top we have the sugar or the addictive content which should ideally form a small part of the consumption of Social Media. Studies indicated 'Passive' usage is associated with loneliness and disconnection which is 'served- content' [1] provided by an algorithm. 'Active' usage of 'Sought Content' and posting is with positive outcomes. Drawing the parallel that 'Served-content' was much like ultra-processed foods that provided a potentially addictive short lived high and users could live on this algorithmically driven 'Served-content'. Ideally the largest portion of the Social Media consumption should be 'Sought Content'

Survey Data

Taking an anonymous survey which received 136 responses and gave a wide range of feedback

Interesting Insights from the survey

- 10% of People who identified as being 'passive' on SM reported hostile abuse or negative comments, that number doubled for people who identified as being 'active'.
- This also applied for upsetting or negative comments from a post 20% for 'passive' users but 40% for the 'active' users
- 50 % of the 'Active' users reported having a community that they value online that supports them while this drops to 40% for 'passive' users
- 12.5% of people who were losing sleep reported experiencing hostile abuse, while 25% of the people who did not report losing sleep reported experiencing hostile abuse
- Almost 75% of respondents reported switching off notifications, of these 55% experienced losing sleep of those who did not report switching them off 65% experienced losing sleep
- 55% of people who reported finding positive or helpful contents found new friends and connections online, whereas 45% of people who did not report finding positive or helpful content online reported finding new friends and connections

Qualitative Data

I left a free text area for people to give insights about their experience with Social Media which also gave some fascinating insights

"It's actually mostly positive for me, I believe it's a reflection of what we engage with, as per the algorithms, but I still spend too much time on it!"

"It can affect your mood. It doesn't give you the same boost as seeing people in person."

"Turning off notifications made a big difference straight away (though it surprised me how isolating and "quiet" it felt to start with)"

It highlighted people's awareness of how the platforms and the algorithms power them in playing a role in the experience of them.

Active / Passive Usage calculator

Part of the SociallyFed.com website features a tool to help users understand their own usage type, along with a checklist of steps to help deal with some of the negative aspects of Social Media.

Conclusions

Humans are social creatures and have social instincts that unconsciously guide us, these were developed long before the creation of this medium. This parallels the challenge we face with food, this has made it an ideal candidate to look at these parallels. The food pyramid was not perfect but highly effective as a high impact tool, there is a need in Social Media for tools to effectively communicate and conceptualise what healthy Social Media use may look like. The author concludes that the 'Socially Fed Pyramid' can provide a useful and high impact tool to communicate the same aims for Social Media use.

Updates in 2023

Artificial Intelligence

In the time since the completion of my report in 2022 and looking at a number of options to carry on this work other emerging and disruptive technologies have emerged. Over this time none has promised more disruption than AI and Generative AI, as someone who has worked as a programmer since 2004 I'm intrigued by both the opportunities and the challenges this poses. My report highlighted the risk of the 'served-content' being the algorithmically enriched content delivered at just the right time and in the right doses to keep users engaged and scrolling. These algorithms are simply driven by weights designed to drive this desired outcome for the simple reason this supports the business by driving engaged users who can be advertised to and have information gleaned from to support this.

Media Consumption

An aspect I did not cover in my report was that consumption of all media, not just social, now forms a very large part of most people's waking hours. As Luminate[3] shows below half of the waking day for adults is consumed engaged in entertainment,

According to Nielsen [2] in 2018 broken down by:

- 4 hours, 46 minutes watching TV
- 3 hours, 9 minutes phone/tablet
- 1 hours, 46 minutes listening to radio
- 39 minutes using the internet on a computer,
- 39 minutes playing games

For younger people in this NY Times article (ages 8 to 12) to five hours and 33 minutes and (ages 13 to 18) eight hours and 39 minutes. This is a massive level of consumption, even if everything consumed was the ideal in terms of the SociallyFed pyramid at this level it would still be a problem as it is allowing little time for much else.

Converge 2023 Update to SociallyFed Pyramid

On June the 27th I presented an update at academyEx Converge outlining what I would like to do next. The tip of the SociallyFed pyramid is 'served-content' curated and presented by algorithms. What if I could utilise AI and algorithms which were weighted with outcomes that were beneficial for the user? I presented the idea of a curation tool to overlay social media news feeds? There was a lot of feedback of potential use cases from this discussion.

Further to this what other tools could I utilise such as allowing users to themselves download a copy of their social media use from say Facebook which allows users to export a limited set of their history on its platform to their own machine and train their own model locally? Having a users own data retained and trained locally would be important. Could such a model provide useful information to the user in an ongoing fashion as an AI powered l Media Nutritionist?

Media Metrics Dashboard

Garmin, Apple Watch, and other wearables provide an overview of health data in a digestible format, phones provide a screen time measurement, what if a richer dashboard could be developed encompassing different media types and consumption of health outcomes.

Dev Academy Practical AI for Devs

To bring myself up to speed commencing 24th October I have enrolled in the DevAcademy course practical usage of AI for Developers[5] to help me come up to speed with developing and creating LLM and the related ecosystem. I would like to have granular control over any application developed and ideally be able to reassure users of sovereignty of their data remaining on their phone or device and not be in the cloud.

academyEx Symposium

With my presentation at the symposium I would like to garner feedback on what might be possible and any potential pitfalls.

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[4] NY Times - Kids as Young as 8 Are Using Social Media More Than Ever, Study Finds
https://www.nytimes.com/2022/03/24/well/family/child-social-media-use.html

[5] Practical AI for Devs
https://devacademy.co.nz/practical-ai-for-developers/

About the presenter

Ben Marino has been working full time as a programmer since 2005, passionate about running having completed a number of Ultra Marathons and Marathons. Having fund raised $4000 for the Mental Health Foundation at the Auckland Marathon; and $6000 for the Mental Health Foundation at the New York Marathon. Passionate about both People and Technology in 2022 completing the Masters of Technological Futures at academyEx, blending these passions into this work.

Resources

Link to presentation

Harnessing AI and Design Thinking to Empower Workplace Diversity and Inclusion

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

Iulia Leilua
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Research Summary

The Culture and Design Lab is an indigenous learning, design and strategy company which focuses on undoing racism and building allyships in the workplace. In this presentation, director Iulia Leilua will discuss her work to prototype an AI driven cultural competency platform called 'Kaiako' to foster diversity and inclusion within New Zealand workplaces and transform workplace cultures.

Kaiako is an extension of Iulia's Master of Technological Futures report 'Bridging Cultural Perspectives Through Emerging Disruptive Technologies', published in He Rourou Volume 1 in 2021.

Iulia Leilua's 36-year experience in Māori and Pacific cultural communications and journalism forms the foundation of her journey to create The Culture and Design Lab. Her Master of Technological Futures was also the catalyst for developing a range of tools since graduating including:

- The Cultural Intelligence Deck, a deck of sorting cards and indigenous lean canvas which helps executives and team leaders overturn their cultural competency challenges. The prototype was tested by MBIE's procurement executive team in 2021.
- Digital Moana – a Māori and Pacific cultural competency platform which uses digital screens throughout an organisation to deliver engaging snackable content, 7 times a day, 365 days a year. The prototype was tested by The Warehouse Group over a 12 month period in 2022.

Throughout Iulia's research it became evident that simply filling cultural competency workshop seats in person or online did not necessarily result in a cultural shift. Realising the need for a more integrated approach, she explored ways of providing "snackable" learning moments throughout the day, fostering continuous cultural competence among employees.

To develop this further, The Culture and Design Lab began developing an AI driven cultural competency platform that measures sentiment and engagement, providing invaluable data analytics to HR departments and illuminating areas for growth and improvement.

Over the next 12 months, Culture and Design Lab aims to validate their idea and address the primary challenges faced by D and I, HR and Training and Development professionals when working with Māori and Pacific peoples. Through continued customer interviews, they aim to gain deep insights and develop their Minimum Viable Product (MVP). Following this, they plan to conduct pilot tests and onboard early adopters to refine and perfect their solution.

The team behind The Culture and Design Lab possesses the ideal combination of expertise and passion to spearhead this transformative idea. At the core of Culture and Design Lab's mission is the endeavour to increase diversity and inclusion in New Zealand workplaces. By empowering workplace leaders to foster social cohesion and cultivate cultural intelligence, they aim to create environments where individuals feel a sense of belonging, inclusion, participation, and recognition.

About the presenter

Iulia Leilua is of Māori (Ngāti Hāua, Ngāti Hekeāwai) and Samoan descent and was born and bred in Taumarunui. She's an award-winning journalist and communications consultant who began her media career at TVNZ in 1987 with Pacific TV show 'Tagata Pasifika'. In 2001 she helped launch the Pacific Islands Media Association before becoming a founding member of Māori Television in 2003. She later became Head of News and Digital Content at Pacific Media Network and a journalist for Māori Television's award-winning current affairs show 'Native Affairs'. Iulia has worked extensively with Māori and Pacific communities in New Zealand and the Pacific region. She's a creative entrepreneur and owns the indigenous learning, design and strategy company called The Culture and Design Lab. In 2021 she completed her Masters of Technological Futures with Tech Futures Lab and launched the digital cultural intelligence platform 'Digital Moana' as a result of her masters.

How can gamification impact the performance and engagement of reading for students in Years 5 and 6?

Research Presentation
academyEX Converge Research Symposium, 24th November 2023

Lisa Everett
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Introduction

Gamification is the application of game design elements in non-game contexts to improve user engagement (Martens, 2014). The purpose of the research was to investigate the following question:

How can gamification impact the performance and engagement of reading for students in Years 5 and 6?

The intended goal for the research was to transform my reading programme by creating a game using the activities students completed weekly. The game was designed in Google Sheets, incorporating a character created by the children and a backstory to complement the game. Kingsley & Grabner-Hagen (2018) note the importance of a narrative, that it "functions as the plot that moves the game along and creates an emotional investment through storytelling" (p. 551). I endeavoured to show that introducing game elements into the classroom would increase the engagement and motivation of the children and, subsequently, their reading abilities.

Communities

The central community was my students during 2019. There were 25 children (11 Year 5 and 14 Year 6). I examined the effects that gamification had on reading engagement and performance both in and out of the classroom. The selection of this community was based on the low reading levels across our Year 5/6 cohort. The initial research project was launched in Term 2 of 2019 and lasted until December 2019.

I also expanded the project to include activities at home. This required input and monitoring from the parents to gauge the impact of the inquiry outside of the immediate classroom context. Furthermore, engaging with colleagues allowed me to discover new digital programmes that could be useful as the students 'levelled up.'

Data Collection Methods and Tools

Quantitative data was collected through Probe reading tests, the game spreadsheet and a progress indicator chart. Probe tests provided information on changes to reading levels. Due to time

constraints, I selected six students across a range of reading abilities. I also monitored student performance through activities completed on their spreadsheet. I linked this data to a progress indicator chart allowing me to view all student activity.

Qualitative data was gathered via student and parent surveys and classroom observations. Pre- and post-student surveys provided valuable information about student attitudes and frequency of reading at home. This enabled me to tailor the game's activities and their XP. Parent surveys assessed changes in reading habits outside the classroom. Observations were also helpful to monitor student engagement (Efron and Ravid (2013).

Ethical Issues

Ethical principles include informed consent, confidentiality and mitigation of harmful effects. This research extended to activities outside the classroom with input from parents, so informed consent was sought from the participants and their parents (Riel, 2014). I provided information to both parties regarding the project's purpose and process. Throughout the project and the subsequent dissemination of my findings, I ensured that names were altered to protect the identity of the participants (NZARE, 2010). One harmful effect I was aware of was that some students could feel pressured to complete activities at a pace they were uncomfortable with, leading to low self-esteem as they struggled to 'level' with their peers. The progress chart allowed me to provide extra support for those children and was kept confidential from all participants.

Anticipated Impacts

The most significant impact I anticipated was increased engagement in the main participants. Lee (2014) concludes that student engagement at school is a significant predictor of academic performance. Therefore, increased engagement will hopefully lead to increased performance for all students in my project.

The aforementioned engagement was facilitated, in part, by giving students a greater level of autonomy (Kingsley & Grabner-Hagen, 2018). Students were presented with all activities and given the choice of what to complete and when. This engagement would lead to students completing every activity, something that was previously unachieved. There were potential disadvantages to this, as I lost some control over what my students chose to do. I attempted to counter this by making undesirable activities worth more XP, encouraging students to complete these regardless of any negative feelings, as it furthered their ability to level.

Furthermore, an anticipated impact was that the inquiry could impact the teaching practice of both myself and my colleagues. If I could show success, this approach could be implemented not only in other classrooms but across different curriculum areas.

Results

My research project asked about the impact of gamification on performance and engagement in reading. After analysing the data, I realised a rather sizable flaw in that I needed to have prior numerical data to compare. Observational notes showed that students experienced increased engagement and positive perceptions towards the programme. It would have been beneficial to have comparative

numerical data. However, the analysis has revealed significant differences between genders and between activities.

Quantitative data was collected through Probe tests and student game spreadsheets. Qualitative data was collected through parent and student surveys and classroom observations. I had extremely high response rates of 100% from students and 96% from parents.

Ad hoc notes were recorded on a Google document. I coded these for positive, negative and feedback comments according to Efron and Ravid's (2013) suggestions. When I analysed the data, 82% of the recorded comments were positive, 11% were based on feedback and only 7% were negative. The overall theme was that the perception towards reading had changed. The Progress Indicator Chart was beneficial to keep me on track with students. I explored the chart and realised it provided no significant data for my analysis. As Babione (2015) states, "Not all data is worthy of analysis, and these data will slow down and frustrate the researcher" (p. 143).

I prepared my data by exporting survey responses to a Google sheet. I also created a tally chart and reviewed each student's spreadsheet. Coding techniques helped me to identify themes and categories throughout my data. I used quantitative coding - the process of categorising the collected non-numerical information into groups and assigning numerical codes (CESSDA, 2018). I considered the categories: gender and types of activities.

Overall, the students completed 47% of the available activities. The findings show that boys completed 75% of digital activities compared to 50% of physical activities (paper or book-based). In contrast, this number was much closer with girls, 38% and 36% respectively. This supports my earlier observations that the boys were more engaged than the girls. The top 5 activities for boys were all digital, compared with only 2 out of 5 activities for girls. Figure 1 shows each activity in ranked format.

Figure 1

Ranking of activities Boys			
Typing.com	Digital	47	97.92
Reading Eggs	Digital	38	79.17
Top Marks	Digital	36	75.00
EPIC	Digital	35	72.92
Read Theory	Digital	34	70.83
Reading Games	Physical	33	68.75
Wonderopolis	Digital	33	68.75
Cloze	Digital	29	60.42
Dictionary Skills	Physical	28	58.33
Reading Respon	Physical	28	58.33
Book Report	Physical	27	56.25
Poems	Physical	27	56.25
Handwriting	Physical	26	54.17
Read to Self	Physical	22	45.83
Word Study	Physical	22	45.83
Reading at Hom	Physical	20	41.67
Prefix/Suffix Car	Physical	19	39.58
Buddy Reading	Physical	18	37.50
SRA	Physical	17	35.42

Ranking of activities girls			
Handwriting	Physical	28	53.85
EPIC	Digital	26	50.00
Poems	Physical	25	48.08
Reading Eggs	Digital	24	46.15
Read to Self	Physical	24	46.15
Typing.com	Digital	24	46.15
Dictionary Skills	Physical	23	44.23
Buddy Reading	Physical	23	44.23
Top Marks	Digital	19	36.54
Word Study	Physical	19	36.54
Book Report	Physical	17	32.69
Prefix/Suffix Car	Physical	17	32.69
Wonderopolis	Digital	16	30.77
Reading Games	Physical	15	28.85
Cloze	Digital	15	28.85
Read Theory	Digital	15	28.85
Reading Respon	Physical	13	25.00
Reading at Hom	Physical	12	23.08
SRA	Physical	8	15.38

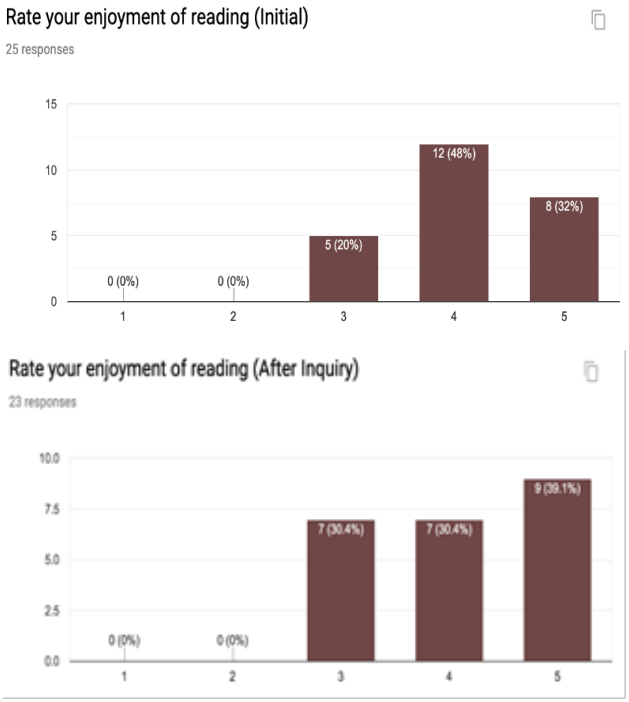
Riel (2018) explains that given the timeframe of this inquiry, a sample of data can be analysed. I selected six students across a range of abilities for Probe reading tests. These results are incredibly positive, with each student showing accelerated learning (Figure 2).

	A	B	C	D
1		Initial RA	RA After Inquiry	Improvement
2	Student A	6.0-7.0	8.0-9.0	2 year increase
3	Student B	9.5-10.5	10.5-11.5	1 year increase
4	Student C	10.5-11.5	11.0-12.0	6 months increase
5	Student D	9.5-10.5	11.0-12.0	1 year 6 month increase
6	Student E	13.0-14.0	13.5-14.5	6 months increase
7	Student F	13.0-14.0	14.0-15.0	1 year increase
8				

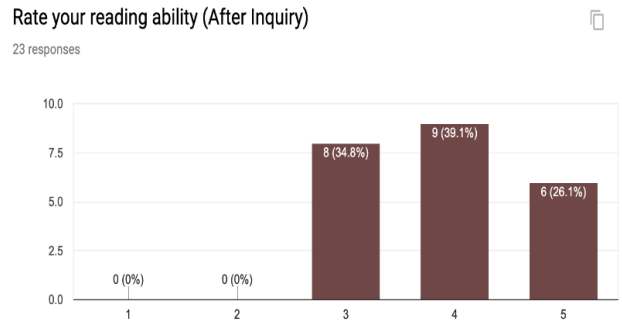
1 - Figure 2

Quantitative data was also collected through parent and student surveys. The questions were designed to indicate changes in reading habits. Figure 3 shows the level of reading enjoyment. It was surprising to note that these levels have experienced a slight decrease, with 10.4% more students giving a neutral response. Figures 4-5, in contrast, show that students rate themselves as having more ability and an increased enjoyment of reading activities.

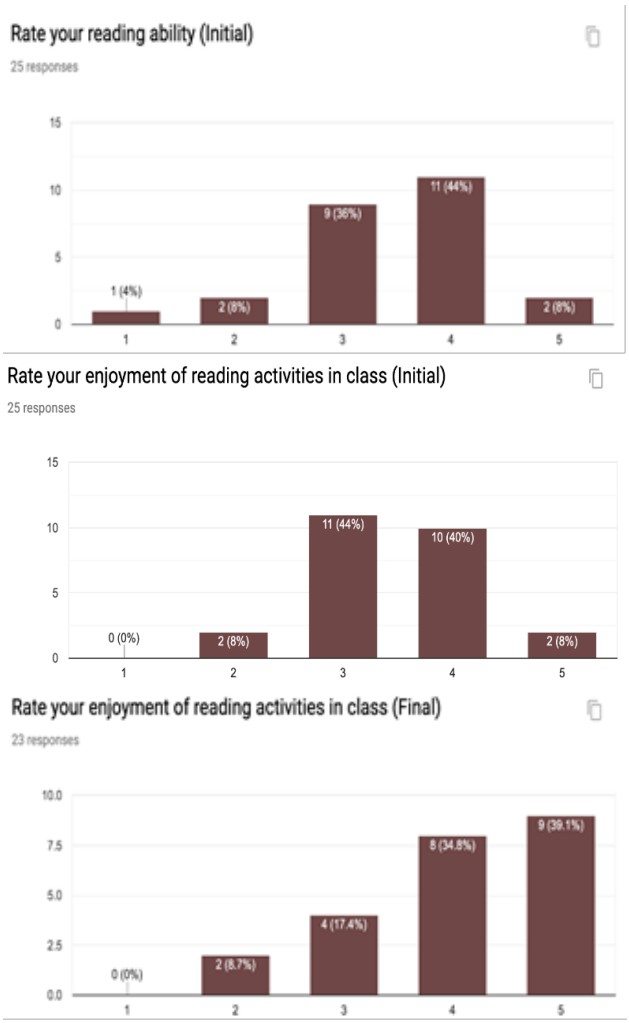
Figure 3



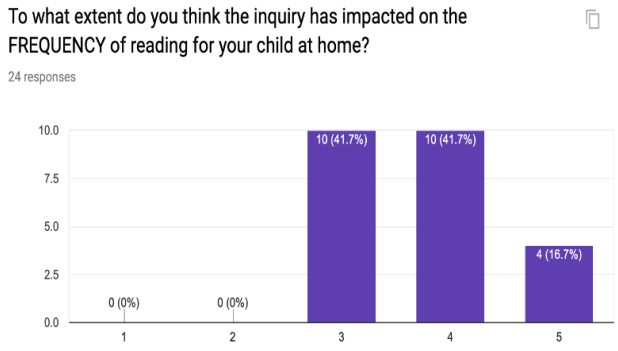
2 - Figure 4



3 - Figure 5



The parent surveys showed increased students' enjoyment and frequency of reading (Figure 6). 78% of parents noted increased enjoyment, while 57% said their child read more at home. The results of the survey show a positive perception towards the research project, evidenced by parental response rates and comments: "It's been a great incentive to get the kids reading" and "'Student A' has spoken highly of the program you developed, calling out the reward system as a highlight."



Conclusion and Further Considerations

I considered that some students may become frustrated or disengaged when not keeping up with their classmates. Conversely, the project had the opposite effect. I noted a sense of camaraderie between the students, and they often worked together to complete activities faster, in some cases, going out of their way to help others. No student voiced any sense of frustration over the project at all. Although a sense of achievement was felt by students when they levelled first, they also discovered that some activities required group work, which could explain why they wanted their classmates to level together.

By giving students more agency, I attempted to foster high levels of engagement and motivation. Bacon (1993) discusses the difference between 'being responsible' and 'being held responsible.' 'Being responsible' is related to intrinsic motivation, where students do the work without constant reminders. 'Being held responsible' sees students doing work only when told to do so. I reflected on ways to foster responsibility and it was warming to note that my students started to view reading as the best part of their day and chose to do reading activities over games or puzzles after break times.

In considering culturally responsive practice and that children have the right to be who they are as an individual, I involved my learners heavily in the subsequent development process. Creating culturally responsive relationships is reciprocal, where the "power to enhance the mana of the other can be a truly shared venture" (Berryman et al., 2018). This means that in creating these relationships, the students have as much to teach me as I do them. I interpret the word 'mana' in this statement to mean personal identity. Another point describes the context of learning as how "we respect and come to know who our students and their whānau are, where they come from and what their prior knowledge and cultural experiences are and what this means for our self and others" (Berryman et al., 2018). Involving parents strengthened the home-school partnership and allowed them opportunities to support their child's learning.

A further observation I made was that engagement levels seemed much higher for boys than girls. Article 2.4 of the NZARE Ethical Guidelines (2010) points out that there should be 'thoughtful concern for the rights and interests of all individuals'. Additionally, the Education Council (2017) outlines the need for teachers to critically examine how their assumptions and beliefs impact practice and the achievement of learners of different genders. The research I undertook, along with my own beliefs, led to the assumption that gamifying my programme would hugely increase the engagement of all learners. Although this is true to some extent, I did not anticipate the difference in levels for gender. This led to further research regarding digital gender divides. I studied the research conducted by Osunde et al. (2015) on the features of digital games that appeal to young males and females. Their findings conclude that significant social interaction, meaningful dialogue and non-competitive structures are the key characteristics that appeal

to females. In contrast, goal-oriented games that are challenging with targets or outcomes appeal more to males.

At the conclusion of the research project, I shared results with parents and colleagues and offered support to staff to introduce gamification in their classrooms. Often, all teachers need is an idea that they can adjust to suit their practice. In providing this support, I endeavoured to embrace games in their true spirit. Klopfer et al. (2009) found that although some educators introduced 'games' into their programmes, they ended up bearing little resemblance to what our 21st-century learners are familiar with - activities that are nothing more than answering questions on an online quiz-style game with an end score.

Since introducing this research, I have used it with subsequent Year 5/6 classes. Keeping in mind the findings and my considerations, I have heavily involved the students in the game's evolution. It has expanded to include maths and writing activities, along with various activities that the students coded as 'Other.' Students have developed reading logs, considering fairness across different ability levels, tracking sheets to record their daily activities and have written the following chapters of the storyline. The next step for this project is to pilot it in different schools and across varying year levels to investigate if engagement levels would also be positively impacted.

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About the presenter

Lisa Everett is a teacher at Nukumea Primary School in Auckland and brings over a decade of teaching experience spanning Years 1-6. She has a passion for integrating digital technology into all areas of the curriculum. An avid gamer and puzzle enthusiast, Lisa's research interests encompass coding, game-based learning and gamification. Holding a Bachelor of Commerce in Commercial Law and Marketing, a Postgraduate Diploma in Primary Teaching, and a Postgraduate Certificate in Digital and Collaborative Learning, she is also recognised as an Advanced Classroom Expertise Teacher. Lisa aims to ignite inspiration in both current and future students through the realm of gaming. Guided by the philosophy of equipping students for the future, she concentrates on fostering problem-solving skills, critical thinking, and curiosity.

Lisa delights in developing students to achieve their fullest potential and has coached Kapa Haka groups and Jump Jam teams. Beyond her dedication to research and teaching, she proudly represented New Zealand in both Pool and Karate, showcasing her competitive spirit. Additionally, Lisa engages in archery competitions, demonstrating her diverse skills and passion for sports.

Resources

Link to slides

Monomono: A Methodology for Indigenous Authentication and Empowering Tongan Sovereignty in EDT. Nurturing Restoration and Regeneration in the Identities of Tongan Women by Safeguarding Traditional Tongan Koloa (Wealth) of Ngatu

Research Presentation

academyEX Converge Research Symposium, 24th November 2023

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Introduction

This research addresses the impact of emerging disruptive technologies (EDT) on traditional indigenous wealth economies, focusing on Tongan Ngatu–a traditional tapa cloth. The study, conducted from June 2021 to July 2022, explores the intricate dynamics of the Tongan indigenous ecosystem, specifically the material wealth associated with Ngatu and Tongan women. In the context of global phenomena's rapid evolution driven by digital currencies and decentralization, the study delves into the risks and challenges faced by the Ngatu economy within the era of high-trust digital systems.

Definitions

Ngatu refers to Tongan Tapa, an ancient material wealth from 850BC that Tongans still value today. The historical and cultural context for Tapa was covered in Phase one. This is not repeated in this paper, rather the focus is on the systems within the Ngatu economy made up of various components and interactions.

Koloa refers to the Tongan traditional material wealth which includes variations of Ngatu (tapa), Fala (mats), Ta'ovala (waist mats).

Monomono is the process of repair, reuse and or regeneration of a tattered piece of Ngatu that is repairable. Monomono is commonly used to refer to 'fixing' or repairing things. In this project the reference to Monomono is in relation to the act of repairing, the process and the concept of Monomono mindset and approach.

Methodology

The research employs a mixed qualitative and quantitative methodology, combining action and phenomenological approaches (Bhandari, 2020), to explore interconnected systems shaping experiences related to Ngatu. Positioned within its broader context, Ngatu constitutes an exclusively indigenous Tongan traditional wealth system (Campbell, 2001). However, external influences like migration, consumerism, and Westernized lifestyles have expanded the Ngatu interest base, challenging Indigenous sovereignty, authenticity, and ownership. This paper posits that existing regulatory measures for Ngatu, influenced by biased foreign systems, lack market visibility, and exclude Tongan women, indigenous

sovereignty, and prevailing currency-based value systems (Fotu 2012 & ILO, 2021). Despite being primary drivers of this market, Tongan women grapple with complexities within rigid social and economic constraints, impacting their well-being, self-efficacy, and cultural ownership.

The research contends that current efforts to support Tongan women's economic prosperity (Kuli, 2016; ILO 2021; Addo, 2013) inadequately address preserving indigenous Tongan wealth systems. Enduring through generations of political and social changes, these systems require heightened accountability and validation through indigenous practices and knowledge. The burgeoning demand for authentic Ngatu (Addo, 2013) poses a significant threat, indicating a potential tipping point in the Ngatu ecosystem, exacerbated by the lack of monitoring mechanisms.

Contemporary challenges faced by Tonga, including economic debt, the aftermath of COVID (UN, 2020), and a volcanic eruption, highlight global repercussions of local events . However, indigenous wealth systems, notably Ngatu, remain underappreciated for their pivotal role in community sustenance. Tonga's cultural resilience, rooted in the relational vaa, distinguishes it as the only surviving indigenous monarchy in the Pacific (Wood-Ellem, 1999). The Ngatu wealth system, emblematic of Tongan women's collective agency (Addo, 2013), embodies Tonga's customary and cultural objectives.

The research hypothesis explores how disruptive technology can authenticate Tongan Ngatu, redefine its application within a technologically disruptive context, and assess implications for a thriving Ngatu economy. To comprehend the Ngatu economy in practice, the study scrutinizes key components, including decision-making processes, investment patterns, values associated with wealth, and regenerative processes involved in repairing and storing Ngatu. The study aims to address identified pain points and contribute valuable insights into the experiences of Tongan women (SPC et al, 2019) within the Ngatu economy.

In conducting this unique project, a culturally informed (Tupeni et al 2004; Thaman 2022) and best-practice ethical approach was prioritized. Participants were provided with consent forms and ample time to opt out, both during and after the research. Continuous opportunities to withdraw were extended to all attendees,

participants, and stakeholders, fostering trust and cultural integrity. Full disclosure of the research intent was maintained, contributing to the credibility of the work and the establishment of a values-based community for indigenous ownership and sovereignty. The fieldwork incorporated exclusive women consultation talanoa, ensuring information authenticity before the final research write-up and ongoing dissemination within the Tongan community and mainstream platforms. This approach continues to guide phase 3 activities for community adoption and innovation.

Research Contribution

The project contributes to indigenous Pacific research (Tupeni et al, 2004) by examining traditional wealth ecosystems amidst conflicting social conditions and considerations for transitioning to Emerging Disruptive Technologies (EDT). Focusing on Ngatu economy systems provides insights for agile systems and indigenous levers for change. Employing human-centred design thinking, the study emphasizes the centrality of culture, people, and knowledge, (Thaman, Lee, Tupeni et al, 2004) particularly advantageous for Pacific communities and innovators. The practice framework model, informed by social theory on cultural sovereignty and regenerative systems, supports Tongan women in

social change and technology solutions, accentuating the strengthening of Indigenous Tongan women practices.

Globally, Indigenous communities recognize the potential of disruptive technology to preserve traditional knowledge (UN, 2020 & United Nations 2020). However, the success of disruptive technology hinges on user experience design, raising concerns about cultural sovereignty's commercialization threat. While empowering individuals and enhancing collective decision-making, disruptive technology also poses threats to cultural safety and sovereignty, especially for Indigenous communities. The project aims to explore the potential and challenges within indigenous Tongan traditional wealth systems, drawing inspiration from successful examples of cultural empowerment through technology in New Zealand.

The research focuses on the Monomono Regenerative and Sovereignty systems in Indigenous Tongan economies and their role in validating traditional Ngatu wealth systems. Monomono, a proven method involving regeneration, restoration, and protection, is intentionally practiced by skilled women on authentic Tongan Ngatu. The repair, renewal, and regeneration approach ensure preservation and distinguish traditional Ngatu from synthetic alternatives, contributing to preserving traditional knowledge and cultural practices amid technological disruptions, providing cultural safety and safeguarding data integrity through reciprocity.

Monomono Presentation

In presenting key findings, the study employs the Monomono's three step approach will be used as a guiding framework, highlighting crucial areas for useful research and raising community awareness and action to ensure the survival of Ngatu and cultural sustainability. Additionally, leveraging the implications for society and agency-led interests is essential for supporting indigenous sovereignty and ensuring intergenerational impact, a critical factor for successful Ngatu sustainability and cultural survival.

Repair Phase:

The presentation will illuminate the dynamic nature of the Tongan women Ngatu ecosystem, a distinctly Tongan-owned and women-led space characterized by shared values and control. Rooted in intergenerational histories dating back to 800 BC, the ecosystem is purposefully designed for intergenerational survival. Queen Salote, the late Tongan sovereign (Wood Ellem, 1999) served as the pioneering cultural and social architect, shaping Tongan worldviews, intricate knowledge systems, and mythologies. Her visionary leadership has played a pivotal role in future-proofing the Ngatu ecosystem, sustaining the Tongan monarchy, and solidifying Tongan culture and vitality over time.

Renew Phase:

Furthermore, the presentation delves into the realization that systems change, and design thinking are integral aspects deeply ingrained in Tongan worldviews and expertise. This is exemplified in Ngatu, where indigenous science and mathematical systems are intricately woven into various forms such as print, art, storytelling, genealogies, and mythologies–well-researched narratives widely shared and known (i.e., Addo, Campbell, Tupeni, Thaman). These narratives form the foundation for practice-based conceptual thinking, prominently applied in sectors like education and health, especially in policy

development and human resource initiatives such as Pacific frameworks like Kakala model (Thaman) and Ministry of Pacific Peoples frameworks like Tapasa, Lalaga Fou (see MPP website).

Ngatu serves as a moral, ethical, and best practice anchor, coming to life through collective storytelling, truth-telling, and peer review practices within the Ngatu production, exchange, presentation, and preservation processes. The paper argues that authentically indigenous Ngatu undergoes continuous renewal, emphasizing the essential role of Tongan women as exclusive custodians of this process and its cultural treasures. While there are also contributions from Tongan men, these additions align with culturally and socially accepted Tongan koloa thinking, practices, and norms.

Regeneration Phase:

The project emphasizes the crucial role of women in central regenerative processes and practices, transcending geographical boundaries (SPC, 2019, Lee, 2003, Kuli, 2016). Continuous intentional collective action must be tailored to the diverse realities of all Tongan women, ensuring inclusivity. The presentation illuminates the lived experiences of Tongan women, revealing widening gaps in Ngatu knowledge exacerbated by the growing prevalence of synthetic variations within the community. Additionally, exposing Ngatu trade markets unveils the exploitation of Tongan women, amplifying economic vulnerability and social harm (ibid).

In conclusion, the project calls for action to address the well-being and protection of Tongan women at all societal levels, aligning with global initiatives for women's safety and indigenous protection (UN 2020). This underscores the importance of incorporating indigenous ethical practices in the regulation of disruptive technology, ensuring sensitivity and support that pose no harm to indigenous sovereignty and survival. The presentation will ask for feedback from attendees for innovation and networking for Indigenous led impact.

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About the presenter

Hainoame is a first-generation NZ born Tongan, a mom of two teenage daughters, and wife to a jack of all trade type husband. Hainoame holds a Master of Arts in Education (Hons) from the University of Auckland since 2005. She attained a second Master of Technological Futures in Emerging Disruptive Technology with TechFutures/ Mindlab graduating in March 2023. Shes also a qualified Food Safety Expert and a highly experienced Vocational trainer and Instructional designer.

In her spare time, she leads a pioneering network of Pasifika Funding experts in the Philanthropy sector in NZ and abroad, as Chair for the Pasifika Funders Network. She recently completed the previous term at the helm as an elected Co-Chair for the Pacific Peoples Advisory Panel for Auckland, where they've made huge progress in strategic advocacy for communities during COVID, inflation, Climate Change and addressing the regions 'state of emergency' conditions and (environmental, social, economic) constraints. She has 25+ year track history culminating community activation/ development, advocacy, civil rights, research, entrepreneurship and governance.

Hainoame currently works in Social Innovation and building Entrepreneurship in the community. Her work to develop digital solutions that maintain Indigenous safety and ethical practices is an intentionally targeted approach towards emergent futures. Hainoame is working to address the impact of globalisation in the lives of Indigenous Pacific communities and exploring the conflicting and detrimental effects on Tongan women's traditional wealth (koloa) and its systems of exchange. She is particularly interested in enabling communities to lead targeted and community led positive change through meaningful and indigenously owned models of wealth sovereignty and wealth regeneration.

Her work to safeguard Pacific Indigenous knowledge systems is aimed to inform data sovereignty, climate financing, and leading advanced cultural intelligence and indigenously ethical practices. Evaluation of responsible tech innovation, coupled with meaningful community adoption that focusses on deeper intergenerational impact is where I hope my work can make the biggest difference – at the coalface of Pasifika collectively owned human design innovation.

Panel Discussion

Education Partnership Innovation Trust

academyEX Converge Research Symposium, 24th November 2023

Louise Taylor

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Panel Summary

The Education Partnership and Innovation Trust (EPIT) was established in 2021 to address some of education's biggest equity challenges so that all learners in Aotearoa can thrive. They do this by growing and supporting multi-sector partnerships between funders, providers, and communities ensuring initiatives for equity are grounded in community, transformative and sustainable. Not only does EPIT help to fund this work, but they offer ongoing support in evaluation, connection, and the sharing of resources and learnings.

Ewan McIntosh (2014) says that the best ideas are often those right under our nose; the ones that come as a result of trying to solve the ongoing persistent problems of work and life. Have you ever had one of these ideas and wondered what to do next? In this panel discussion we will be addressing this question. The speakers will collectively share where their idea came from and how they have engaged with community to grow and sustain this idea. Embedded in this work is a commitment to achieving more equitable opportunities for learners in Aotearoa | New Zealand, while honouring Te Tiriti O Waitangi and the cultural diversity within our motu | country.

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About the Panel Host

Louise Taylor is a research and education consultant with an ongoing commitment to achieving equitable outcomes for society, particularly young people. This is reflected in her work, particularly the research she has carried out and mentored over the past 20 years. Today she represents the Education

Partnership and Innovation Trust, where she is currently their evaluation advisor. Louise will be leading the panel discussion.

Paul Dickson - Growing Mighty Kids

Paul from Oke Charity will be sharing about the Growing Mighty Kids programme which provides support for schools to develop gardens as part of a wider gardening, cooking and learning programme. Ongoing support ensures the gardens thrive and become part of school life and learning.

Where: South Tāmaki Makaurau | Auckland

Sector: Primary

Judy Newcombe - SchoolTalk

Judy, representing Te Kete Hono and The Stonefields Collaborative Trust will be talking about School Talk and how this has grown from a parent idea to a nationwide digital platform that enables a better understanding of individual learners. The result is greater learner agency and improved outcomes.

Where: Across Aotearoa | New Zealand

Sector: Primary

Jilly Tyler &Madeleine Sheahan - Talking Matters

Jilly Tyler and Madeleine Sheahan will be sharing how Talking Matters has been using a community led co-design model that supports whānau and teachers to provide language-rich environments for children in their first 1000 days.

Where: Across Aotearoa | New Zealand

Sector: Early years

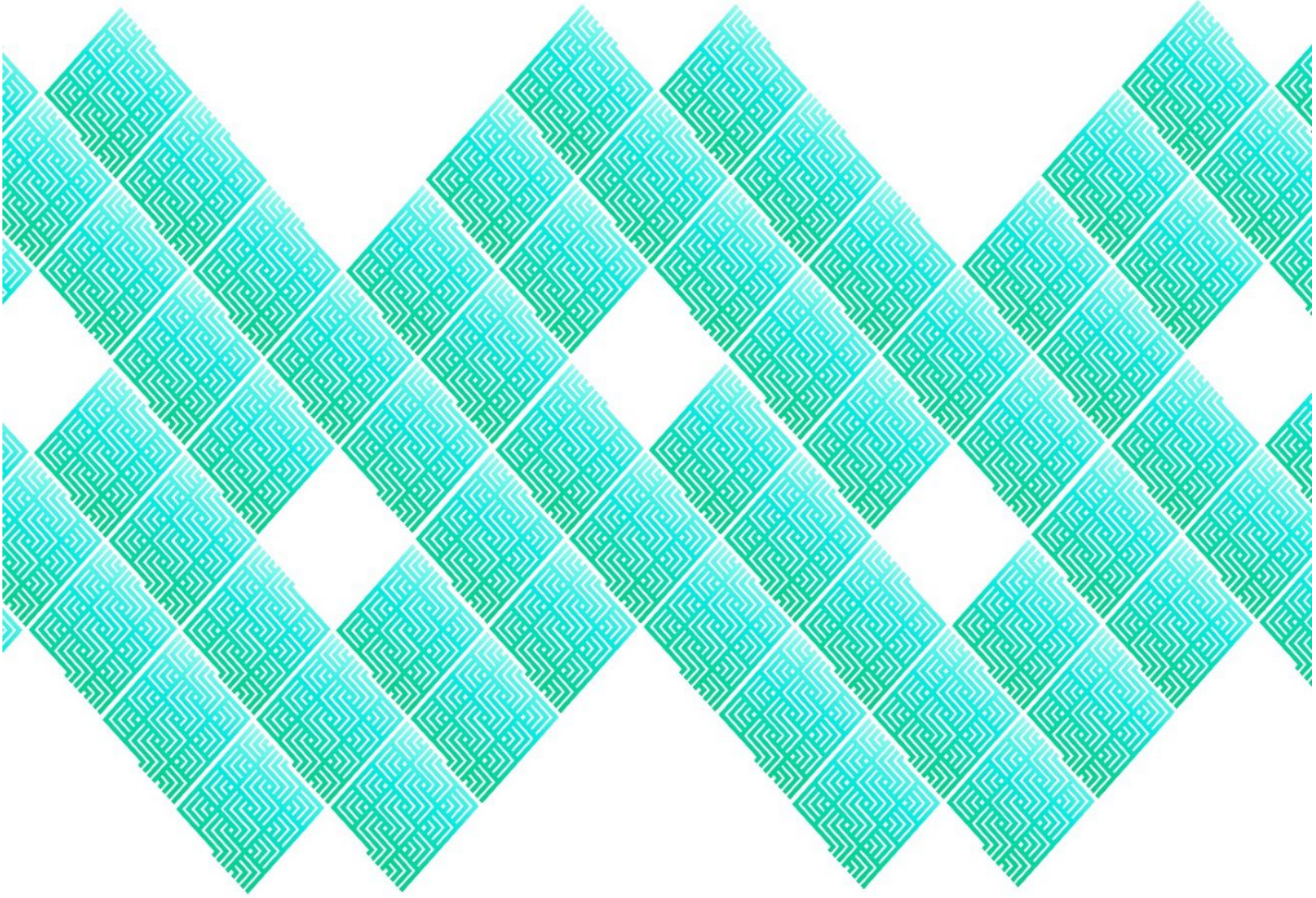
Anna Munro - Tuakana Reading

Anna from Waitākere College will share how this pilot programme has grown from an idea to an embedded part of the school English programme. The initiative supports reading in homes and is increasing confidence and pleasure in reading across the whānau.

Where: West Tāmaki Makaurau | Auckland

Sector: Secondary

Poster presentations



Judy Christie

Future Proof Me: How Might Te Whare Tapa Whā guide an exploration of emerging and disruptive technologies to support me in ageing well?

Ben Marino

Socially Fed: Conceptualising a healthy media diet

Ben Marino

BiasGuard: A conscience for bias?

Priyan Jayamaha

Waka Hourua: Augmented Reality Integrated Board Game

Zoey Gruener

Tara Iti: How might the implementation of an Employee Exchange programme help Tara Iti Golf Club retain their employees to enhance the Employee Experience

Sophia Xiaoyu Zhang, Truman Pham, Herbert Thomas

Discovering Teacher Leaders: The Journey to Self-Identification

Craig Hilton

Three Unrealised Ideas

Gavin Newtown-Hooper

Democratising access to healthcare through Point of Care Testing

Faymie Li

Improving tertiary international students' mental health and wellbeing in Aotearoa New Zealand through technologies

Fiona Pond

Project Impact: Developing a Master of Technological Futures (MTF) Database

Dianne Rafter

Will AI take your job? Are you ready?

Hugh Wilson

Microhub, Drone and Bus Package Delivery System

Jade Tang Taylor

How might we explore the convergence of Design Thinking, Systems Thinking, and Futures Thinking for shaping a better world?

David Parsons, Hayley Sparks, Darcy Vo, Anzel Singh

The Student Experience of Technology-Focused Micro-credentials as Part of a Larger Learning Journey

Joe Harris

How to get real nutrition when you can't get real food

Katheren Leitner

The Foundation for Digital Transformation: A Practical Approach

Brett Oetgen

Reimagining the future of the SME ecosystem

Huw Jones

Whensday: An Exercise in Futuring

Chris Grace

Is Anyone Out There?

Tania Rowland

Experiential Contemplative Activities: An experiment to accelerate New Zealanders positive sustainability behaviours

Kensa Randle

Beyond Obstacles: Enhancing Short-Term Goal Attainment in Youth

Roz Tuitama

WhanauConnect: Bringing about Change in a School Environment

Oli Le Livre

Do you have an idea? No-Code Technology