



# TE AROHA COLLEGE

*A purpose joyful; A courage blameless*

## Global Teaching Trends

### Melbourne National Future Schools Conference

by Heather Gorrie - Principal, Assistant Principal Sam Mortimer, Head of English Rachel Scott & Head of Mathematics Steve Darby – March 2019

#### Executive Summary

Attending National Future Schools for the second year, we were challenged with the latest in educational thinking with a focus on Science, Technology and Mathematics.

Masterclasses covered the first day. For Steve this was a chance to focus on STEM. For the rest of us it was a chance to focus on neuro science research and thinking related to teaching and leadership.

As the main conference began we were treated to a fantastic presentation from Dr Jordan Nguyen. Dr Jordan Nguyen is a Vietnamese- Australian biomedical engineer whose achievements include creating a mind controlled wheelchair, and whose technological innovations are targeted at improving the lives of those living with physical disabilities. This was a stunning way to look at the future of what education can be. What followed was equally as challenging and thought provoking. The speakers were a plethora of talent and innovation, the like of which are just not available in New Zealand under one roof.

## AT TE AROHA COLLEGE WE ARE



**GLOBALLY  
CONNECTED**



**RESPECTFUL  
RESPONSIBLE**



**EFFECTIVE  
COMMUNICATORS**



**ACTIVE  
ACHIEVERS**



**THOUGHTFUL  
LEADERS**



## Melbourne National Future Schools Conference

### Staff Report

#### Conference Reflection

*This is the second time I have gone to this conference and both times it challenged my thinking around education now and in the future.*

*The theme for me during the week was around ensuring that all students develop their interpersonal skills and key competencies. All of the amazing speakers had a few things in common:*

- 1. Passion for an idea*
- 2. Wanting to make a difference*
- 3. Resilience to learn key skills that they needed to make their ideas a reality. For example, if they didn't know how to code or use a drone they taught themselves.*
- 4. The ability to communicate and work together with others.*
- 5. Confidence*

**Sam Mortimer**

Fast paced and back to back we were treated to a raft of thinking and practice that challenged our operations and aspirations and allowed us to look at potential futures for our Te Aroha learners. We were presented with diversity, excellence, passion, perseverance and all speakers were clear on the need to build confident and resilient young people for the future.

For us as a team the time was priceless. To think and reflect on what we do well and what needs work is a critical part of our ongoing improvement process. It was also a time to see the individual talents and strengths of our own teaching team as they interacted with the many ideas that were presented though our four days away. This is a critically exercise in re-pollination where we got the opportunity to look up look out and look forward to the bigger picture of education for life.

As part of our journey our team have been asked to consider what were 'the key takeaways' were for them and this too forms part of our report.





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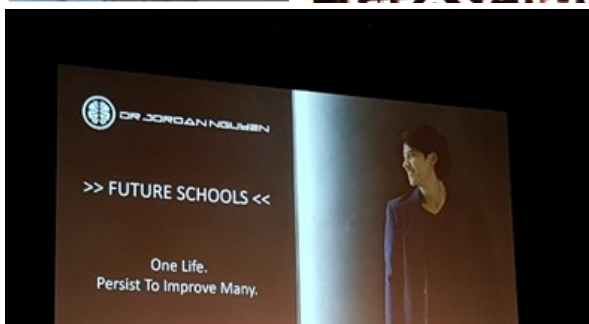
## Melbourne National Future Schools Conference

### Dr Jordan Nguyen

Dr. Jordan Nguyen is a young man on a mission to change the world. He is an acclaimed thought leader on the intersection between technology and humanity.

At a moment of the most extraordinary breakthroughs in our understanding of the human brain, Jordan has a magical combination of technical brilliance with the unique ability to inspire people.

A truly inspirational communicator, Jordan presents on technology and the power of the mind at prestigious events internationally including Think Inc., Wired for Wonder, and the Engineering for Medicine and Biology Conference – the world's largest annual biomedical conference.



**Staff Report-**The National Future School Conference was an excellent Professional Learning opportunity with number of quality key note speakers. My big takeaway messages from the conference came primarily from two outstanding presenters, Dr Jordan Nguyen and Dr Vanessa Pirotta. This being that finding a purpose is important. We should be looking to provide opportunities for students to find their passions which can then in turn drive their education. Our kids need to Dream big, then raise the bar higher. Think beyond themselves and look make a difference for the many. Do our kids in our small town see a bigger picture and think in a global sense. We should be all thinking about how we make a positive difference. In the teaching game we have opportunities everyday to make a positive difference in the lives of our students. Do we value this as we get into the daily grind of planning and assessment?

I enjoyed my masterclass session. STEM or STEAM are buzz words in education at present and appear to be driving the technology curriculum in Australia. Is this something we should be looking at as a Smart Days option in some shape or form.

Some other important messages were. Change has never been faster - and will likely never be this slow again. How prepared are our students for this future?

A strong community builds a strong individual. Not the other way round. Do our school and classroom communities operate in this way? How collaborative are we?

Thanks for the opportunity to attend this conference. It was both thought provoking and inspiring

**Steve Darby**



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**Dr Jordan Nguyen**

Upon completing his PhD in Biomedical Engineering at the University of Technology Sydney, Jordan was accepted into the prestigious UTS Chancellor's List. Now his mission is to improve the lives of as many people as possible. As founder of Psykinetic he designs life-changing technologies focusing on intelligent, futuristic and inclusive technology.

Drawing on his experience of almost breaking his own neck, Jordan developed a mind-controlled smart wheelchair for people with high-level physical disability.

A hot topic of discussion in the media, Jordan's amazing work has been featured in a range of TV, radio, magazine and newspaper interviews, including ABC's Catalyst and Channel TEN's The Project.

Jordan is a NSW State Finalist for Australian of the Year 2017.

As a speaker Jordan has the ability to translate highly technical concepts and future trends into clear and concise content, relevant to any organisation looking to proactively embrace and adapt to technological change.

His recent documentary, 'Becoming Superhuman' won the 2017 Eureka Prize for Science Journalism, adding to the list of numerous awards it has achieved so far:

- \*Winner ATOM Award Best Factual Television Series Australia 2016
- \*Winner ROCKIE Award Best Science and Technology, BANFF \*World Media Festival, Canada 2017
- \*Winner Gold award for NSW ACS awards Australia 2016
- \*Winner Best Documentary Picture This International Disability \*Film Festival, Canada. 2016
- \*Winner Gold REMI Award 50th Annual International Independent \*Film Festival, WorldFest, USA. 2016
- \*Finalist Department of Industry, Innovation and Science Eureka \*Prize for Science Journalism
- \*Official Selection SUPER GEEK Film Festival Florida Supercon USA
- \*Official Selection SCINEMA International Science Festival, Australia
- \*Official Selection ASSIM VIVEMOS International Disability Film Festival, Brazil

Dr Jordan Nguyen talks all things futuristic and life-changing inclusive technologies and humanity. The mastermind behind the world renowned mind-controlled smart wheelchair for people with high-level physical disability, Dr Jordan Nguyen explores the most extraordinary breakthroughs in our understanding of the brain.

Jordan Nguyen, Innovator, Visionary, Inventor, Psykinetic



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Dr Jordan Nguyen

Jordan's parents were his biggest inspiration in his life. He was artistic throughout his childhood and found his academic side later. He didn't know what he wanted to do and didn't have direction or purpose. 'Purpose is important in our lives. We need to feel that we belong and be part of something.' He wanted to do well in his last year at school so he could get into his engineering degree - robotics, mathematics (which wasn't his strength), all made sense once he started applying it and built a robotic - Sandra. After he nearly broke his neck he started to look at ways to support people with disabilities with technology. Jordan developed a wheelchair to be controlled by the person's brain. He did this with the signals in the brain using AI which finds patterns in the brain waves. Jordan engraved on his ipod; One life. Persist to improve many. He wanted to make a difference. Jordan started the company Psykinetic and a tv production house - to communicate and shape the world. We need to look outside our own bubble. He travelled to China to look at this. His travels took him throughout the world looking at science issues including the melting glaciers in the Himalayas.

Data from around the world will support our world's direction. Technology can support us but face to face so important to build our connections.

His key messages to foster for the future were:

1. **Creativity Imagination Adaptability**
2. **Problem Solving & Critical Thinking**
3. **Interdisciplinary Knowledge & Experience**
4. **Communication, Connection, Collaboration, Empathy**
5. **Know thyself**





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## Staff Report

It was a pleasure to attend the Future Schools Conference in Melbourne. The focus was on technology in education and Tuesday's whole day Master Class set the tone for me. Dr Juli Newman spoke about how the advances in neuroscience intersect with teaching and learning. She explained how the latest research in neuroscience show us more than ever before how learners learn, and to recognise when learners lack resilience as learning becomes difficult. I found her chart of "the learning dip" particularly interesting, and identified the "conscious incompetence" as the phase where teachers need to be at their most engaging.

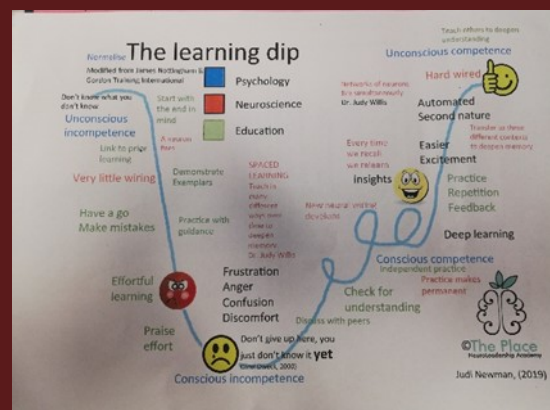
On the Wednesday I attended eight speakers, who were remarkable in their achievements and their stories of overcoming resilience. Dr Newman's ideas were expanded on and I could see how these very successful learners had advantages in terms of brain development and access to technology during their education which had enabled them to do great things. It challenged me to see how students who do not have the same advantages can also be successful in a technological world. On Thursday I attended 6 speakers, and 2 round table sessions. The round table sessions involved groups of about 10 with one main speaker. This was a great opportunity to hear the experiences of other educators, and have more specific one on one time with the speakers. I appreciated hearing the experiences and points of view of other teachers. Equity and access to technology were themes that affected us all.

I took away two main thoughts from the Conference. The first is, how can we ensure that our students at Te Aroha College have equitable opportunities when it comes to technology and brain development so that they can become true global contributors. The second is how to make my curriculum area of English relevant in a technological world. English is the only curriculum area which mandates "reads for personal enjoyment and fulfilment" and it is a challenge to compete in an exciting technological world.

Rachel Scott

Head of

English





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**Suzy Urbaniak Geoscience Educator, Geologist and Core Coordinator**

**Suzy Urbaniak Geoscience Educator, Geologist and Core Coordinator**

## THE CASE FOR TURNING SCHOOL STUDENTS INTO SCIENTISTS

Suzy asked herself; Why did I go to school? Once out in the real world as a geologist she could connect to all of her subjects she studied in school. Therefore, in her own classroom she wants young scientists and young engineers. She wants then to understand how their subjects apply to the real world? They need how to problem solve and be creative! Students need these “soft” skills for all students - not just the top academic kids but for all! We need to support our students so they can all become successful and achieve.



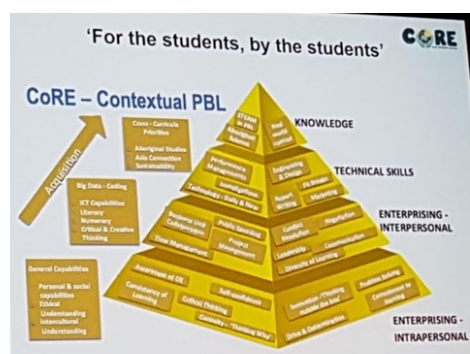
She was a one-woman whirlwind wanting to ‘blow up’ the Australian education system. Fed up with a restrictive, overloaded, and often irrelevant curriculum, she’s created her own teaching program at Kent Street Senior High School focusing on real-world problem solving. For her contributions to science teaching, and inspiring our next generation of scientists, Suzy Urbaniak has been awarded the 2016 Prime Minister’s Prize for Excellence in Science Teaching in Secondary Schools.

Through the teaching program she developed known as Centre of Resources Excellence (CoRE), Suzy makes sure her students are equipped with the right skills and knowledge to take on a variety of career pathways in science and engineering. She treats the classroom as a workplace, and the students as young scientists.

Suzy Urbaniak spoke of her CoRE learning journey #therealclassroom where you will she shared the CoRE idea, the case for turning school students into real scientists, uncovered the CoRE development of an award-winning STEAM program that made us rethink STEAM programs forever, and defined the CoRE deliverables and understand the roadblocks and lessons learned along the way!

The case for turning school students into real scientist.

- Re-think how STEAM programs are formed
- Define clear deliverables and navigate roadblocks along the way





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**Dr Andrew Fuller Psychologist**



## **Dr Andrew Fuller Psychologist**

Recently described as someone who ‘puts the heart back into psychology’, Andrew Fuller is a clinical psychologist who specialises in the health and welfare of young people and their families. He has worked with schools and communities both nationally and internationally aiming to boost resilience.

Andrew has worked as a principal consultant to the national drug prevention strategy REDI, the ABC on children’s television programs, is an Ambassador for Mind Matters and is a member of the National Coalition Against Bullying. He is also a Fellow of the Department of Psychiatry and the Department of Learning and Educational Development at the University of Melbourne.

Focussing on the concept of resilience, he helps schools create coherent and applicable framework sensitive to the developmental needs of both young people and their teachers. Andrew has also helped in the establishment of programs for the promotion of good mental health in schools, substance abuse prevention, reduction of violence and bullying, suicide prevention and assisting homeless youth.

As an author, he has written several books including ‘Tricky Kids’, ‘Guerilla Tactics for Teachers’, ‘Help Your Child Succeed at School’, ‘Raising Real People’, ‘From Surviving to Thriving’, ‘Work Smarter Not Harder’ and ‘Beating Bullies’. He has also co-authored a series of programs for the promotion of resilience and emotional intelligence titled ‘The Heart Masters’, which is used in over 3500 schools in Australia and Britain.

With continual involvement in counselling young people, Andrew Fuller holds current knowledge and information about mental health. His presentations are informative, educational and grounded ensuring every audience member feels equipped to handle mental health.

Latest research findings in brain based learning in children: implications for teaching

- Neuro-developmental differentiation takes our knowledge on resilience and positive education into classrooms
- Explore different parts of the brain - strengths and areas for development
- Developing individual learning plans and identifying strengths and blockages





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Chris Clay - Founder Education Unleashed

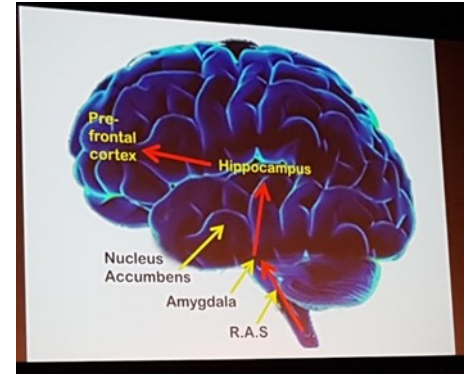
**Teaching for the modern age - I'm in the business of neuro architecture!**

Neuro diversity - schools aren't often neuro diverse - we need to say here everyone can get smart.

When we think in pictures we learn what we think. Memories are constructed stories and enhance creativity

"To become more resilient students need a positive comment from a significant adult not just a parent or teacher."

Learning strengths - <https://mylearningstrengths.com>

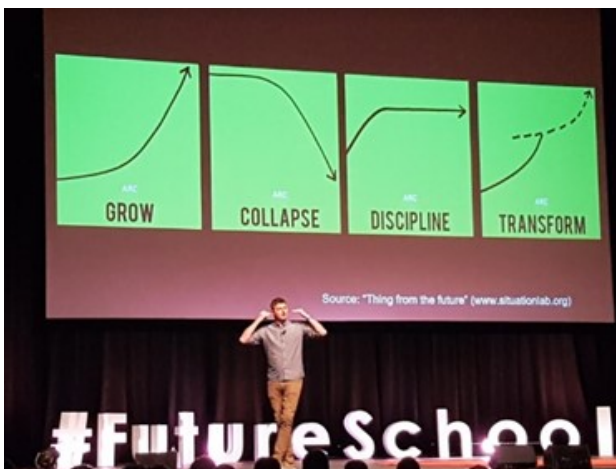


## Chris Clay - Founder Education Unleashed

An education expert based in Christchurch New Zealand, Chris is a leader in educational leadership, entrepreneurial thinking, real-world learning and complexity theory. He is an educational speaker who was awarded Microsoft's International Innovative Educator ahead of over 200,000 educators from around the world. "Learning to Think Differently" was at the core of Chris' s presentation.

To infinity and beyond

- Exploring the future with all it's wicked problems and opportunities
- Future-focussed education - what it is and what we want it to be
- Delve into the future role of education and what this might mean for your school and community





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## Felicity Furey - The Power of Engineering

### Felicity Furey - The Power of Engineering

Felicity is a Civil Engineer who has delivered Australia's mega

Infrastructure projects for over 10 years. This work includes extending the life of the Sydney Harbour Tunnel, delivering a life saving upgrade to the most dangerous road in Brisbane, and shaping the city of Melbourne as a design manager on the West Gate Tunnel Project.

Felicity applies the design principles learnt in her professional career to engineer a better society. She identifies the root cause of societies 'wicked' challenges, and creates businesses which tackle these directly.

By co-founding and leading companies Power of Engineering and Machinam, Felicity has increased diversity in the people who design our world - engineers, inspired thousands of students across Australia into engineering and enabled them to answer the question 'why am I learning this in maths class?'

Felicity is backed by some of Australia's largest companies like Qantas, Boeing, Telstra and Energy Australia who partner with her to help implement her vision.



This work has led her to be awarded

- Engineers Australia, Innovative Engineer
- AFR BOSS Magazine, Young Executive of the Year
- AFR and Westpac, 100 Women of Influence

Felicity is currently an Engineer in Residence at the Swinburne University of Technology's Engineering Practice Academy.



Her presentation focused on :

1. How to teach students to think creatively
2. Educating students how to learn by deduction
3. Critical thinking and problem solving for the 21<sup>st</sup> century
4. How can business and education sectors work together to fix the skills gap shortage



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Julie Lindsay | Global Educator, Innovator, Teacherpreneur, Author

## Julie Lindsay | Global Educator, Innovator, Teacherpreneur, Author



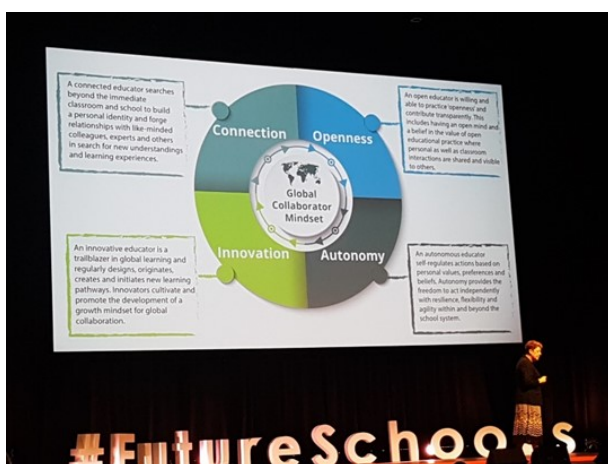
### Flat Connections

Julie is a global collaboration consultant, innovator, teacherpreneur and author. As an online learning specialist Julie has led digital innovation in K-12 schools across six countries and recently she enjoys working in higher education in an environment that fosters innovation and creativity.

As Founder and CEO of Flat Connections she designs online global collaborative projects and professional learning for educators using a collaborative 'working with' approach. Julie is completing a PhD at the University of Southern Queensland focusing on how online global collaboration influences educator mindset and pedagogical practice. Her most recent book, 'The Global Educator' (ISTE, 2016) shares practices, pedagogy and case studies on how to learn and collaborate online. Read more: <http://about.me/julielindsay> Follow Julie on Twitter @julielindsay.

### The Global Collaborator Mindset Presentation

- What are the dispositions, behaviours and pedagogical practices educators must develop for online global collaborative learning?
- What does a school need to do to prepare learners for future workplace challenges of virtual communication and collaboration that require intercultural understanding, global competency and digital fluency?
- Learn how you can adopt a global collaborator mindset to implement online global collaborative learning environments





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Dr Vanessa Pirotta - Marine Biologist, Woman In Stem

## Dr Vanessa Pirotta - Marine Biologist, Woman In Stem, Drone Whale Snot Collector Macquarie University

Vanessa Pirotta is a conservation biologist and science communicator. Her PhD research is primarily marine conservation based. Vanessa investigated the use of emerging technologies such as drones to collect whale snot as an assessment of whale health. She spoke about this research at the prestigious science communication competition called FameLab, where she won the Australian final and came runner up in the world final in the United Kingdom.

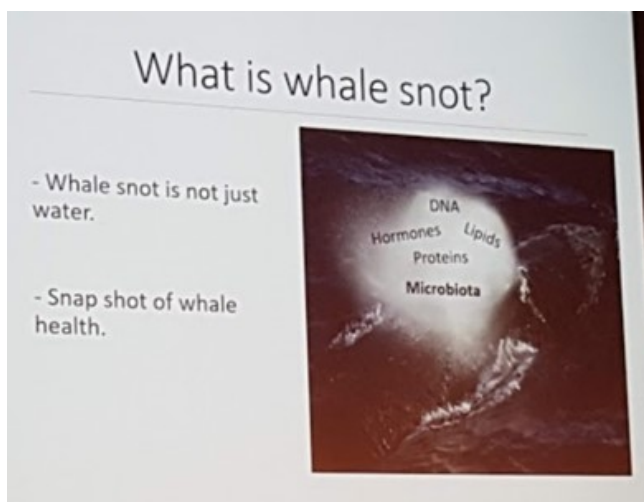


Vanessa completed my Master of Research in 2014, where she investigated the effects of underwater construction and whale alarms upon migrating humpback whales off Sydney, Australia. She holds a Bachelor of Science from the Australian National University with majors in Zoology and Evolution and Ecology. Previously a zookeeper and involved in marine turtle rehabilitation, Vanessa has conducted research in a variety of remote locations around Australia, Madagascar, the South Pacific and Antarctica.

Her presentation focused on A Passion for Education  
Following your path and passion

Her presentation focused on A Passion for Education  
Following your path and passion

- Science and communication accessibility
- How to network
- Goal setting



## Further information

 @vanessapirotta

[www.vanessapirotta.com](http://www.vanessapirotta.com)

 @vanessapirotta



 @Drvanessapirotta

 Drvanessapirotta

Vanessa Pirotta is a  
marine biologist,  
science  
communicator and  
woman in STEM.