2019 **Tertiary Teaching Excellence Awards**
General Category

Nomination for Andrew Eberhard

Information Systems & Operations Management
The University of Auckland

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EXCELLENT TEACHING IN INFORMATION SYSTEMS

I have taught in the University of Auckland Business School's Department of Information Systems and Operations Management (ISOM) for well over a decade. During this time I have contributed to a range of programmes (undergraduate, postgraduate and executive) and courses (Database Applications, Business Productivity Tools, Information Systems Technology, Accounting Information Systems, Business Systems). The link between all the courses is that they involve turning data into information using information technology, that is, sense-making in an increasingly connected world.

Excellent teaching in Information Systems is about motivating students to take a lead in discovering and exploring the field. Excellence is achieved by:

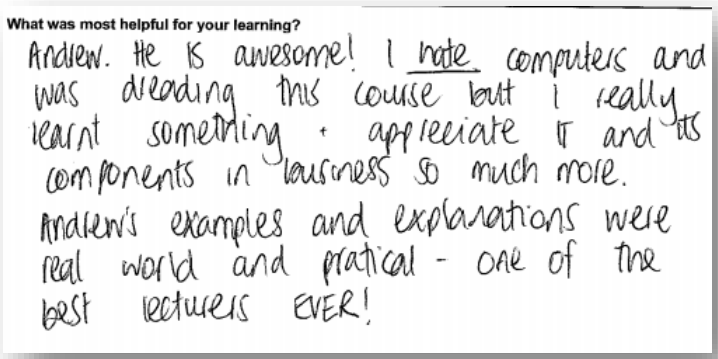
- ***Captivating and engaging students*** by introducing examples that make them sit up and marvel at the impact of technology on the world and by utilising electronic tools to improve their learning outcomes.

- ***Connecting with students*** by making the subject come to life. I believe that this is best achieved by engaging students in learning that is relevant, tangible and sharable. I also believe in using technology to ensure no students are left behind.

- ***Cultivating*** students' passion for the subject itself by encouraging them to think critically about how they can use their knowledge of information and data to make the world a better place beyond the classroom.

- ***Capacity-building***. Excellence in teaching is not a solo venture. Each year, I directly teach approximately 2,200 students but I also strive to have an impact on even more students throughout the University by actively disseminating innovations and good teaching practice that help many of my colleagues improve their teaching.

Finally, excellence in teaching requires a commitment to ongoing personal and professional development. This is particularly true when teaching Information Systems as the field changes so rapidly. I need to ensure that what I teach is current, relevant and research-informed. To do so I have to engage with industry, review the latest academic literature and continually update my hands-on technical skills.


What was most helpful for your learning?
Andrew. He is awesome! I hate computers and was dreading this course but I really learnt something + appreciate IT and its components in business so much more. Andrew's examples and explanations were real world and pratical - one of the best lecturers EVER!

CAREER OVERVIEW

In 1994 I became the first person in my family to attend university. At the University of Auckland I discovered an environment where learning and teaching are celebrated and embraced. I was lucky that during my postgraduate study in 2000 I found a part-time graduate role as a Tutor in Information Systems where I thrived. This, in turn, resulted in a promotion to Senior Tutor and a full time role. In 2011 I transitioned to the new role of Professional Teaching Fellow (PTF). A Professional Teaching Fellowship seemed ideal for me. As my Head of Department said, it was as if the position's academic standards had been written for me. The emphasis on teaching innovation and dissemination exactly fitted my practices and priorities.

As a PTF I have the privilege of being able to focus exclusively on my teaching practice, experimenting and discovering new ways to improve the curriculum and university experience for both students and teachers. I am passionate about finding ways of enhancing student learning in large classroom settings and supporting my colleagues to manage teaching at scale. True to my commitment to innovation and dissemination I have had an impact not only in my own faculty, but right across the University and beyond. I feel fortunate to have a job I love and the opportunity to make a difference.

Since becoming a PTF I have also been actively involved in many teaching service roles. For example, I was the curriculum director for our new Business Analytics major. I was involved in piloting and championing our new learning management system, Canvas. I've served on Learning and Teaching Committees and project working groups. I was the first PTF elected to the University Senate. Over time this has resulted in me taking on more leadership roles.

In August 2018 I transferred from the Department of Information Systems and Operations Management to our Graduate School of Management where I was promoted to Director - Business Masters Programmes. I now oversee more than 60 courses a year and work on enabling the staff who teach on these programmes to excel. One of my conditions of acceptance was that I stay in the classroom as I believe it is vital that I stay grounded and connected with my students.

> *Andrew is an incredible educator, coach and mentor. I have seen him strive to use his love of teaching, technology and transformation to positively impact as many students as possible. His lecturing style is infectious. He is charismatic and energetic and this is great for students. He brings so much motivation to class that student attendance actually increases during his lectures. This is even more impressive given that he teaches a class of around 1000 students each semester.*
>
> INFOSYS 110 student, 2017

INFOSYS 110

In the last ten years most of my teaching has been in the context of INFOSYS110 Business Systems, a large (1000+ students per semester), compulsory course which is required for all undergraduate students in the Business School. I started off as its Course Coordinator and, once I became eligible, I assumed the Course Director role.

This course has been the most challenging and rewarding of my career. When I first started on this course it had the reputation of being the worst course in the Business School. And at the time, the Business School's teaching was the lowest rating in the University.

The course faced a number of challenges. Students were bored, disengaged and struggling. Many students dreaded taking it: they feared it would be technical and difficult. Almost every INFOSYS110 student is studying at university for the first time. Many of them are international or first-in-family students.

Along with my colleagues, Professor David Sundaram and Dr Gabrielle Peko, I introduced a series of operational and pedagogical innovations that enhanced student learning, improved student feedback and transformed student perceptions of Information Systems. These innovations have also been widely shared and many of them are now the default mode of operating in the Business School and beyond.

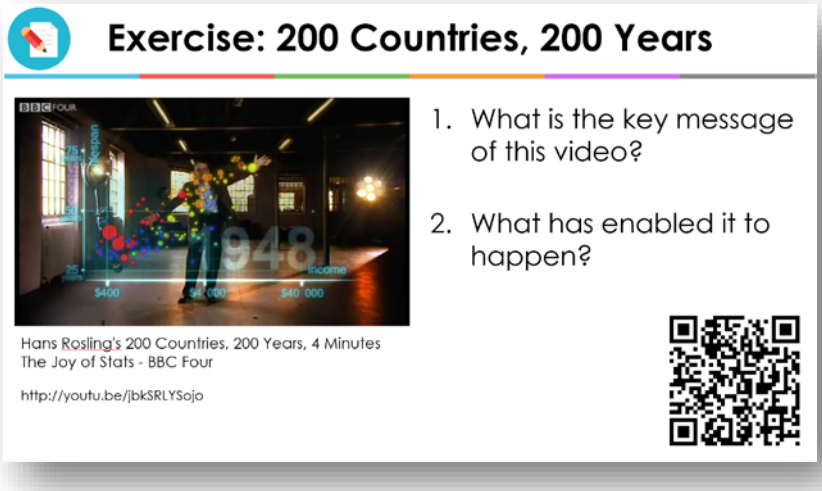
CAPTIVATING AND ENGAGING STUDENTS

Engaging students in large class settings is the greatest challenge I face in INFOSYS 110, which takes place in the University's largest lecture, seating about 550 students. This is what it looks like from the front of the room.

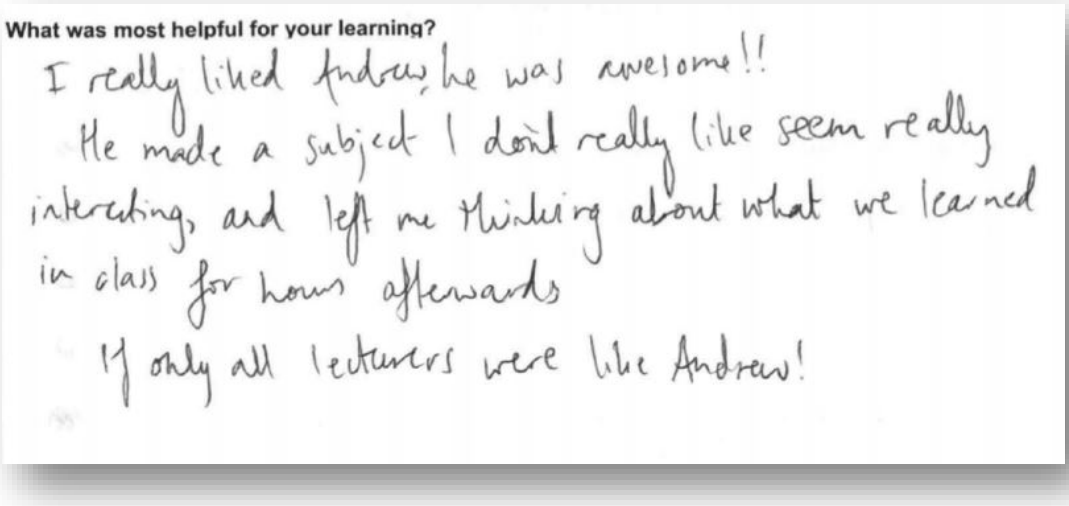
There are two elements to engaging students at scale: in-class activities and outside-class activities. I use very little technology in class – just the normal visual aids and occasionally an interactive response system. However, I make extensive use of technology to engage students and enhance their learning outside of the classroom.

In-class activities

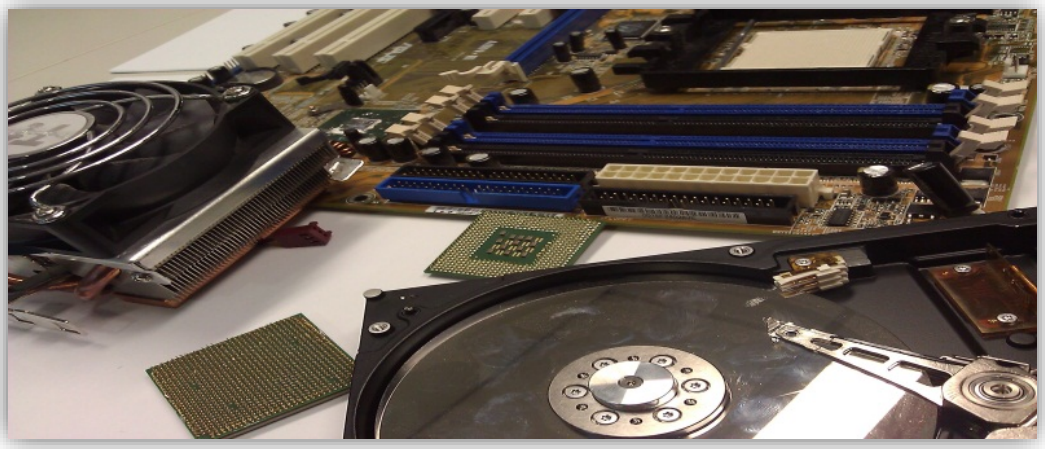
My primary modality is the use of compelling stories. I structure each of my lecture sessions around these. For example, in the slide pictured below I play a short video by Professor Hans Rosling. This video plots over 200 000 data points to tell a story about the health and wealth of 200 countries over the last 200 years. I let the students discuss the questions I have posed with each other for a couple of minutes and then lead a broader class-based discussion. I can subsequently link the content of the video to the underlying principles, theories and technologies of Information Systems. For example, this video links in to sustainability, ethics, data management, and data visualisation.



The beauty of this approach is that students get pulled in to the topics almost unwittingly. They engage with them and get captivated by them.



Sometimes captivating students is just about making the underlying technology seem real. Another technique I use is to bring in physical artefacts rather than just using imagery. For example, I bring in some of my old computer components when I talk about computer hardware.

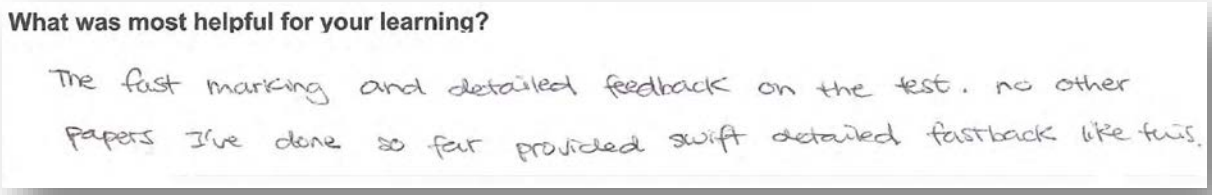


> *Andrew is very effective in terms of a lecturer. Really cool how he is able to pull out his own experiences and apply these to the course in lectures. He made the content interesting by interacting with students to help explain answers and had practical elements to the lectures. In particular I found the lesson with the computer components really engaging.*
>
> INFOSYS110 student, 2017

I then weave the content into a story from my past, for example talking about how when I started at university we still used 1.44mb floppy disks. I can then add a layer of theory (e.g. Moore's Law which predicts that the number of transistors on a chip will double every two years) to show how we can predict future technological trends.

Outside-class activities

Providing prompt and meaningful feedback on assessment for students is an extremely important way of engaging students, and I am constantly looking for assessment strategies that are smarter, more personalised and creative.



I prioritise meaningful, individual and prompt student feedback (Race, 2005). Without timely, substantive feedback students cannot improve. Marking student work is one of the highlights of my job. I love seeing students grow to meet (and often exceed) the expected standard.

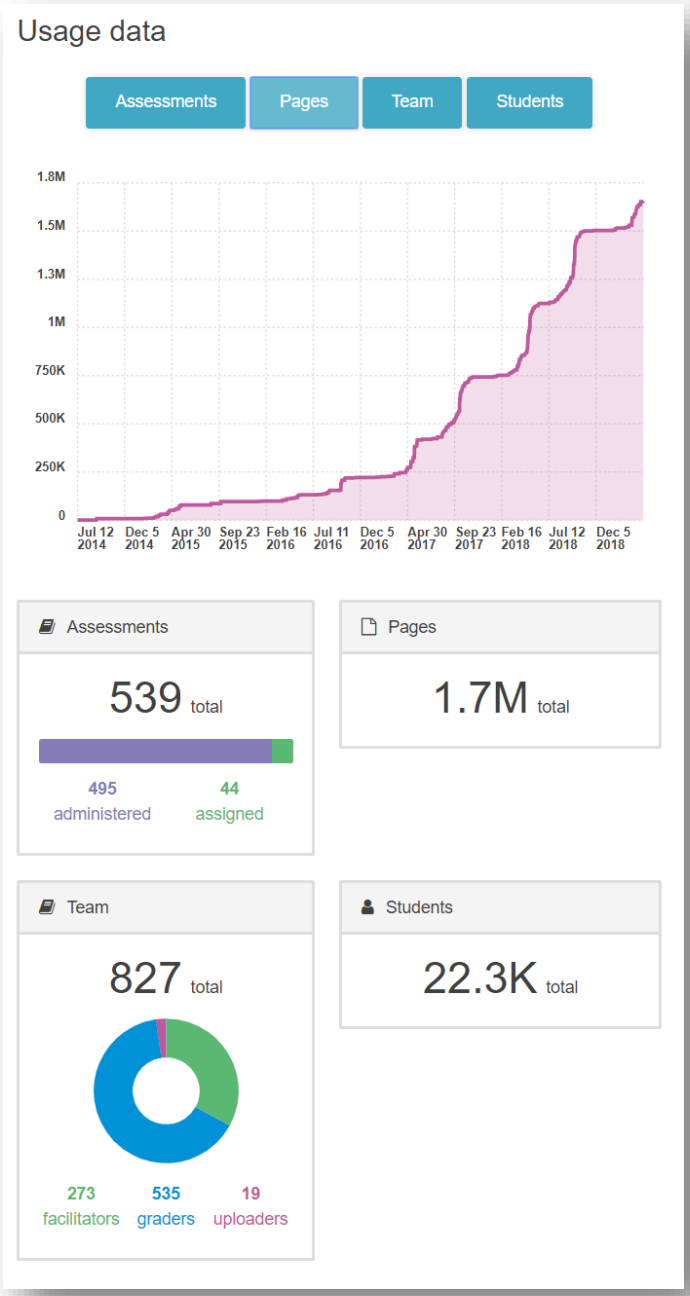
My primary method of providing feedback is via screencast. Using this tool I can put my student's work up on my screen and make a recording about what I'm seeing and how the student can improve. The video and audio feedback allows students to see their work from my viewpoint. This approach allows me to be rigorous and critical without undermining their confidence. They can hear from my tone of voice that the feedback is intended to help them improve. Nuance and tone are often lost in typed feedback.

> *The feedback we got on our individual critiques was great. The video format is fantastic to hear your exact thought process.*
>
> INFOMGT 392 student, 2018
>
> *The entire course, the fact that Andrew gives video feedback discussing your visualization is amazing, and you get individual feedback for every assignment.*
>
> INFOMGT 392 student, 2018

Video is not always possible so I have built custom marking solutions for marking handwritten work. However, keeping these up-to-date took too much of my time so I went looking for commercial alternatives. This led me to CrowdMark, which I piloted in INFOSYS 110 and then helped roll out across the wider University.

CrowdMark is a collaborative online grading and analytics platform that allows grading to be done anywhere and anytime. It also facilitates electronic marking and feedback distribution for handwritten tests. Using this system has enabled a massive speed-up in my provision of student feedback (Eberhard & Sheridan, 2016).

I have been an enthusiastic supporter of online marking via CrowdMark and have encouraged its use in other courses across the University. With it, we can mark and release (with feedback) 1000 test scripts over a weekend. Results of an INFOSYS 110 test sat on Thursday evening are with students by Monday afternoon. Students greatly appreciate the rapid turnaround. CrowdMark eliminates paper-handling, facilitates anonymous marking, and can email test scripts with results, statistics, and feedback directly to students. So far, we have had over 1.7 million pages of student assessment go through CrowdMark.



Piazza is an online gathering place where students can ask, answer, and explore questions 24/7, under the guidance of teaching staff. It has enabled us to answer hundreds of student questions very quickly. INFOSYS110 was the first course in the Business School to use Piazza and I have been an enthusiastic advocate of its use.

> *Using Piazza in INFOSYS 110 enabled me to learn more effectively by answering questions from my classmates. I liked how Andrew and the teaching team were very engaging with the responses.*
>
> INFOSYS 110 student, 2017

The usage has grown so much that it is now embedded within the University's Learning Management System (Canvas) by default for all courses across the University. Staff value these tools and are actively using them in their teaching to improve student learning.

The application of Andrew's strategies has revolutionised our assessment practice in medical, medical sciences and nursing courses … Andrew has enabled us to create additional 'assessment-as-learning' opportunities and [helped us adopt] mechanisms of providing more timely and meaningful individualised feedback to students.

Angela Tsai
PTF, Faculty of Health and Medical Sciences, 2019

CONNECTING WITH STUDENTS

Authentic learning tasks

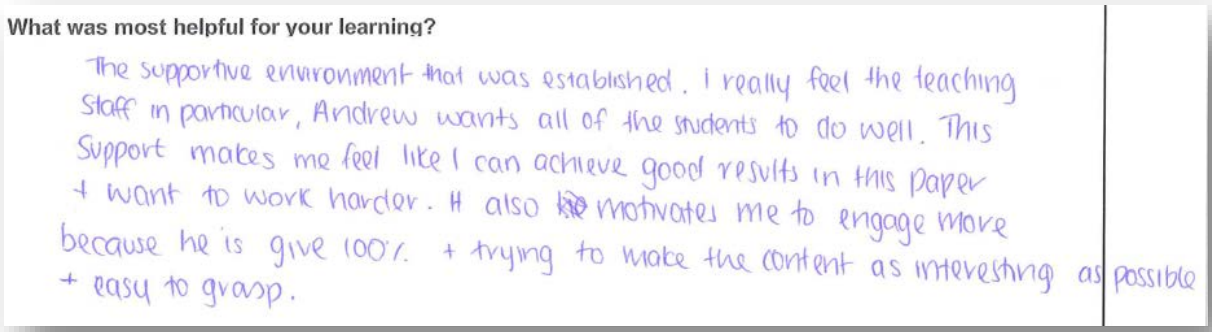
I connect my students with information technology by encouraging them to draw upon their personal experience to construct knowledge. As a constructionist, I believe that knowledge is best created through building things that are tangible and sharable. I have my students perform authentic tasks that mirror those they will undertake after they graduate and enter employment. For example, in my data visualisation course I ask my students to build data visualisations using industry-standard tools. They then present these to their peers and explain their design decisions according to theory.

Andrew is an amazing lecturer… The course content is deceptively difficult, but it really doesn't feel like work. Takes a lot of practice, but once you get used to it will all make sense and you end up applying the knowledge you learn to stuff in real life.

INFOMGMT 392 student, 2018

Helping struggling students

Teaching is only one part of a teaching academic's role. We also have duties of pastoral care. A large number of students come to university and then get lost in one way or another. Some struggle with language. Some are socially isolated or academically under-prepared. Sometimes they are the first person in their family to attend university. I empathise with these struggles and have worked for many years to support and mentor such students. Naturally I used Information Technology to connect with these students.


What was most helpful for your learning?

The supportive environment that was established. I really feel the teaching staff in particular, Andrew wants all of the students to do well. This support makes me feel like I can achieve good results in this paper + want to work harder. It also motivates me to engage more because he is give 100%. + trying to make the content as interesting as possible + easy to grasp.

I devised a way of combining data from various systems to help me to identify at-risk students in my core Stage 1 course. As soon as a student is tagged as "at risk" I will try and find the appropriate type of help for them. For example, if they are "at risk" due to language issues then I can get our language support team to intervene. Our Tuakana group very quickly linked up with me and I provided them with data that helped them to target Māori and Pacific students who appeared to be struggling. This is important for student retention especially at Stage 1. The University provides a lot of support but it can be hard for students to know where to go or even that they might need some extra help.

> *Andrew has always helped me put everything into perspective. Andrew goes above and beyond for all his students. He is reachable at any time of the day, any day of the week. He will answer your questions, whether INFOSYS-related or not. He will ground you when he realizes your head is too high in the clouds, but he will build you up when you feel like all hope is lost. He sees his students as individuals rather than simply students that come and go every semester.*
>
> INFOSYS 110 Student, 2012

I presented my method to the wider Business School community at our learning and teaching showcase "Learn, Do, Share". It was immediately taken up by our Business School Learning and Teaching support team (Innovative Learning Team) which now has its own tracking system.

Andrew cares deeply about his students and this has driven his extensive work with analytics, where he has developed early warning systems that serve to identify "at risk" students.

Inspired by Andrew's work, I now have a number of additional procedures in place to detect at risk students and then follow up with them.

Peter Bier
Associate Dean (Learning and Teaching)
Faculty of Engineering, 2018

This work resulted in the award of a competitive fellowship through the Centre for Learning and Research in Higher Education (CLeaR) in 2016. My project looked at combining the data from Canvas (our LMS), DELNA (Diagnostic English Language Needs Assessment) results, Student Services Online and other sources to enable lecturers, and faculty support staff, to detect at-risk students and intervene early to promote their engagement with the University.

CULTIVATING AND EXTENDING STUDENTS

What students do inside the classroom is important but so is the application of their skills outside the classroom. A prime example of how I have supported this is my leadership of the University of Auckland Microsoft Imagine Cup programme which I have used to cultivate my students' passion for information technology.

The Imagine Cup is a global student technology program and competition that provides opportunities for students across all disciplines to team up and use their creativity, passion and knowledge of technology to create applications, games and integrate solutions that can change the way we live, work and play. When I got involved with this programme/event in 2010, Microsoft NZ was struggling to get entries and received less than 50 from across New Zealand. By the end of the first year of my involvement the organizers were receiving in excess of 500 entries and almost all of them from the University of Auckland. A team from the University of Auckland has been in the worldwide final for 7/8 years that I led this initiative and by 2014 a University of Auckland team won first prize in the Innovation category at the Microsoft Imagine Cup finals in Seattle, beating teams from 34 other countries. In 2015 I received the inaugural UABS Academic Service Contribution Award for leading these initiatives.

Empowering students to understand the impact of technology across different tertiary disciplines was important for Microsoft to foster more entrepreneurship across our youth. The work Andrew Eberhard drove through the ISOM department, formulating a structure/programme to engage every ISOM student to technology through the Imagine Cup was instrumental to the success we have seen from the University of Auckland. In numbers alone, Andrew inspired nearly 80% of our entries into the national competition from the work he did with his ISOM students. A great achievement and massive impact when we look back at some of those students today.

Ryan Tarak
Partner Development Manager
Microsoft New Zealand

Similarly I mentored one of our students to win the LSE Digital Innovation Challenge, which is an international competition for students to explore how digital innovations influence business and society. I coached another student who won one of the prizes in Velocity, the UoA Entrepreneurial Development programme.

CAPACITY BUILDING

Building the PTF network

I strongly believe that "knowledge is in the network" (Siemens, 2005). There is value in sharing knowledge and empowering my colleagues through bringing together like-minded people from across the University into communities of practice that can inspire a strong, innovative teaching culture. I decided the best way to do so was to form a PTF group in the Business School, to make "smart friends" from around the University and share via conferences and teaching presentations.

Andrew has been instrumental in the cross-faculty pollination of successful tools and strategies, such as the adoption of the Piazza discussion software across many courses. Andrew also keeps people in the loop on important issues … helping point others towards tools and events they may not have known about.

Peter Bier
Associate Dean (Learning and Teaching)
Engineering, 2018

Sharing ideas and problem-solving with "smart friends"

My smart friends and I meet regularly to discuss teaching and learning. I have also deliberately connected with many PTFs from other academic and service units outside of my own area. We share ideas and problems with each other and in that way disseminate knowledge across the faculties. We also serve to drive each other to excel and to take leadership in our respective faculties. All these people have had a tremendous influence on my teaching.

What has taken Andrew's informal leadership impact to quite another level … is that he is also the definition of a collaborator in academic practice, particularly as someone who truly leads by example in being so open to continually sharing and communicating far beyond his own Department and discipline.

Dr Doug Carrie
Director of Learning and Teaching, UABS, 2019

I have encouraged and mentored PTFs to give presentations on teaching at departmental, faculty and university level as this is a powerful way to spread best practice. It has become the norm that if there is a teaching forum on then there will be multiple PTFs participating e.g. at our last Business School Teaching and Learning Forum over half the presenters were PTFs.

Andrew was pivotal in helping me grow professionally into the role of Professional Teaching Fellow. He has enlightened me with practical teaching and career guidance based on his personal experience.

Ron Tiong
UABS, 2018

I have encouraged and mentored PTFs to take leadership positions in teaching and learning, or example to run for committees where PTFs have not been historically represented. Many of our Teaching and Learning-related Committees now have PTFs on them by default.

Andrew connects and builds new relationships with ease. His energy and passion for teaching is infectious, and is a great source of inspiration for me. He inspires me to continuously seek improvement in my teaching.

Khushbu Tilvalwala
UABS, 2018

Championing innovation in educational technology

I am an avid champion of using educational technology to improve student learning. In 2012, I founded "Learn, Do, Share", the UABS Teaching and Learning Showcase with a range of invited speakers from across the University. Over 70 people attended the inaugural session and it was a great success, and is now an annual fixture.

Andrew initiated what has become a very important part of the University's teaching calendar. The Business School's "Learn.Do.Share" event regularly attracts staff from across the University to a morning of presentations about teaching practice and innovative projects. This helps promote and support a culture of change and innovation.

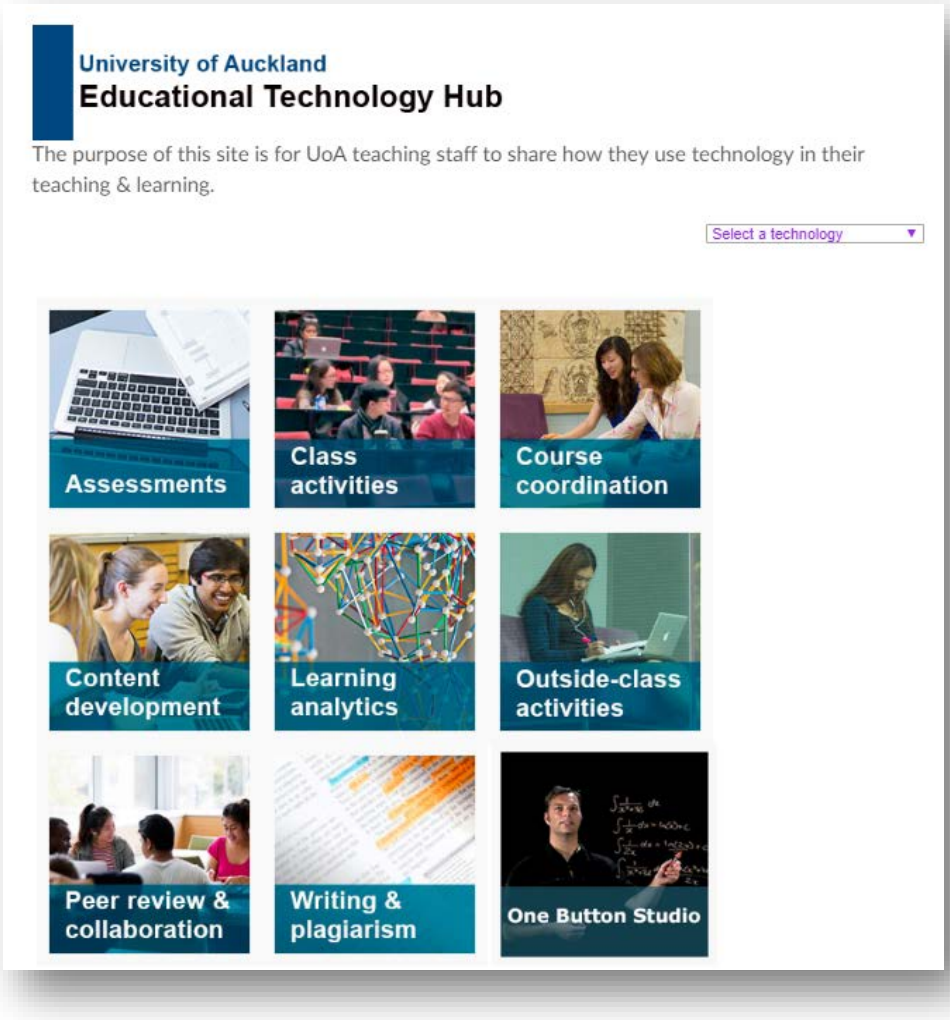
Dr Kevin Morris
University of Auckland Director of Learning and Teaching, 2019

My interest in this area has also contributed to the design, development and implementation of an Educational Technology Hub for University of Auckland staff. We (smart friends) liaised

with an array of professional staff (web designers, media producers, etc.) as well as a large number of teaching champions who would be willing to share their stories about how they use technology in their learning and teaching. The main idea behind the hub is that it contained stories from colleagues to whom others could reach out.

> *Thank you for your help and advice earlier this year regarding video assignments ... I feel that it worked much better than the year before largely due to advice from you, so I just wanted to let you know that your input was put into practice.*
>
> Dr Jenny Malmstrom
> Engineering, 2018

We presented about this at the Theta conference (Wang, Bhargava, Eberhard, & Kim, 2017) and it generated great interest. This resource is open to the world at http://www.auckland.ac.nz/edtechhub and has had well over ten thousand page views.



In addition to these examples there are many times where my colleagues have come to me to help them get things done or taken my ideas and turned them into useful tools for the wider University. For example, I helped get the One Button Studio (a self-service video recording tool) established by advocating for it, finding a location, and creating the training video. This is a facility that has become widely used across my institution.

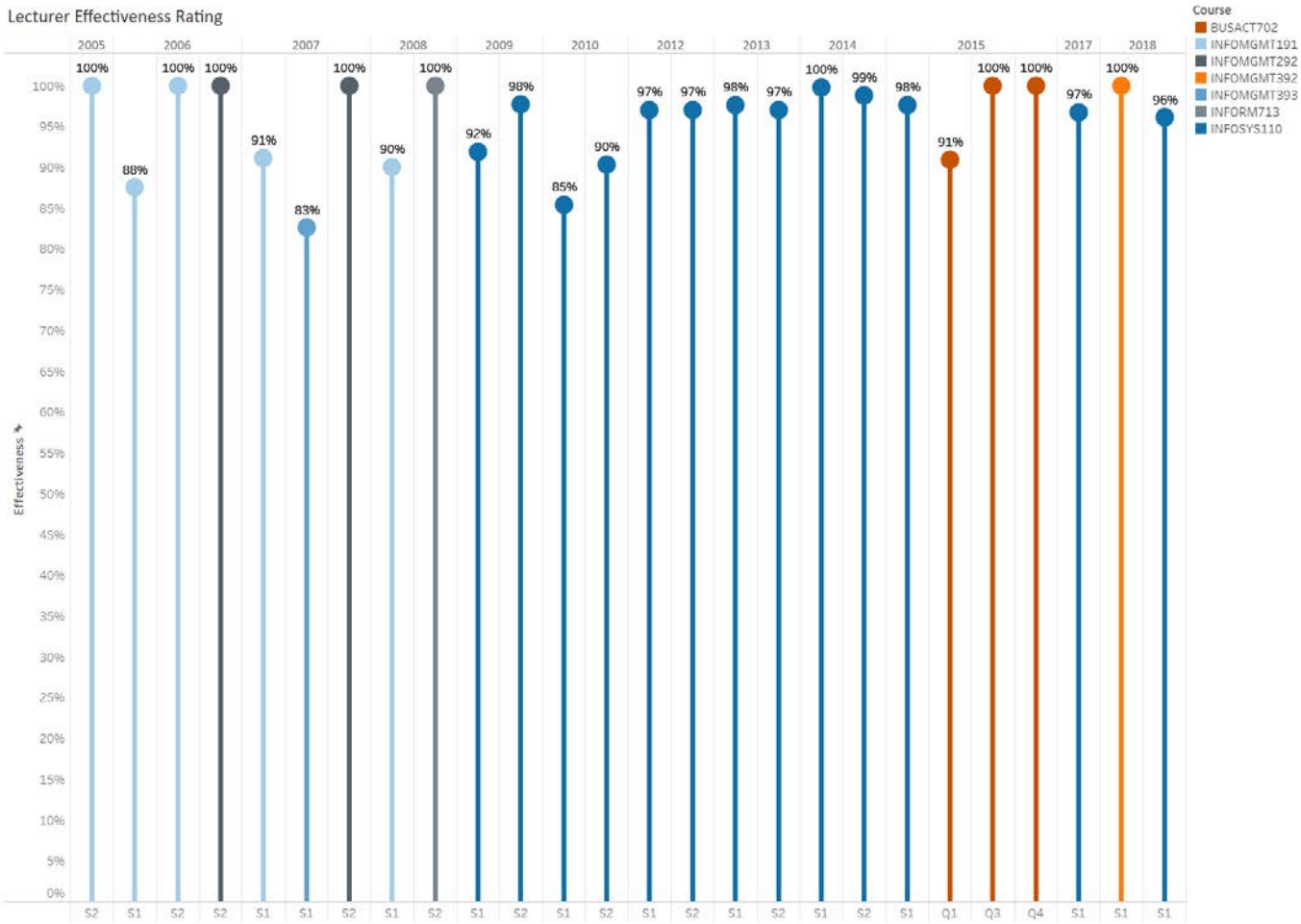
There are so many innovations and initiatives that Andrew has pioneered or led over the years that have now simply become part of the fabric for how the Business School, and in many cases the wider University, conducts its undergraduate teaching and learning operations.

Dr Doug Carrie
Director of Learning and Teaching, UABS, 2019

EVIDENCE OF EFFECTIVENESS

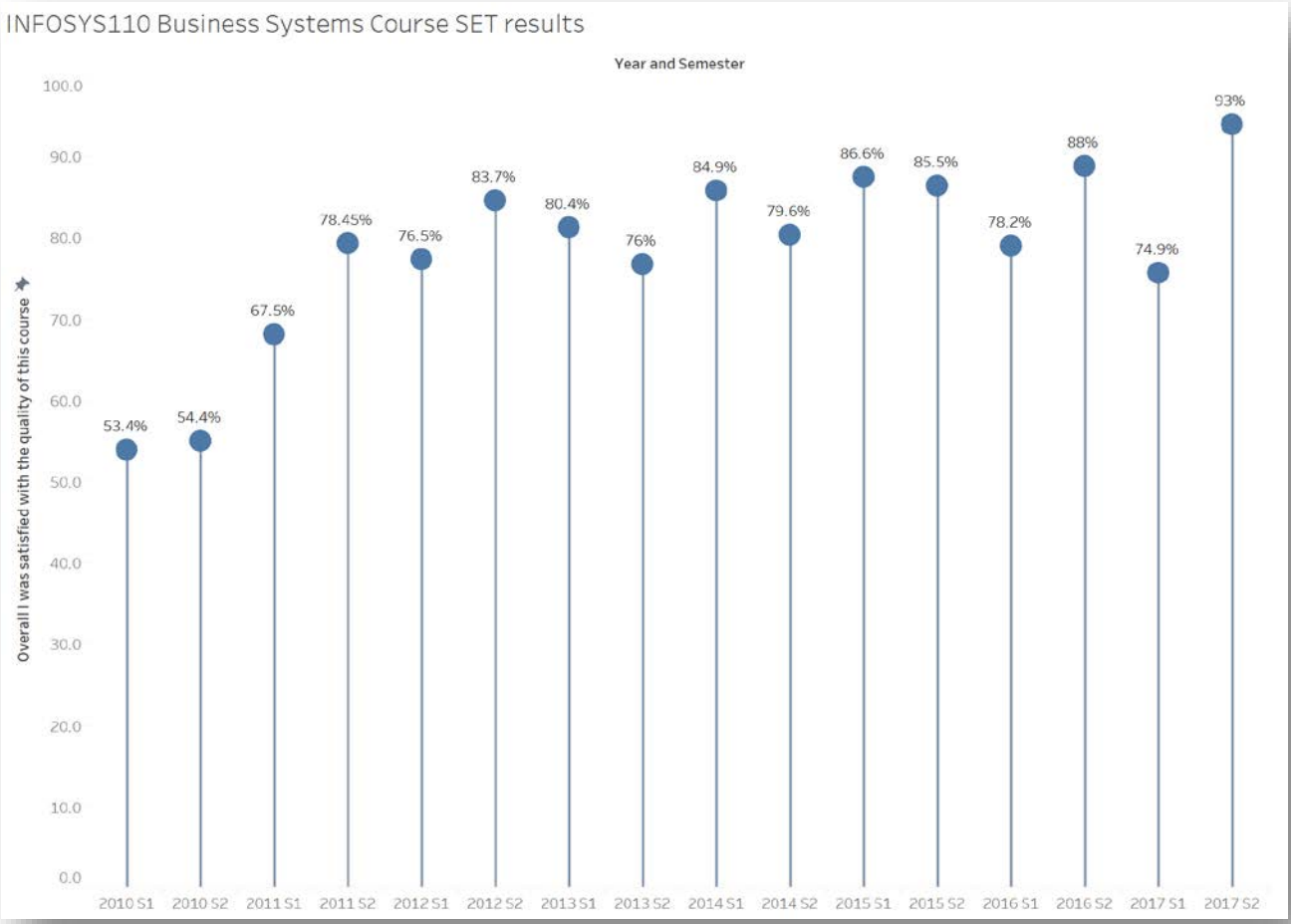
My practice is strongly evidence-based and responsive to the results from our Student Evaluation of Teaching (SET) system, written and verbal feedback from students, and peer review by my colleagues. When the evidence suggests I have to change my practice, I do.

My lecturer SET results are consistently high across all levels of teaching:



Turning around INFOSYS 110

Here is an example of course effectiveness ratings for INFOSYS 110 Business Systems, the course that my colleagues and I turned around. You can see from the pattern that it wasn't an immediate magical fix. It took consistent, applied and thoughtful effort, learning what worked and what didn't work.



At the end of each semester I go through the comments from my SET feedback looking for trends and things that I can do to review.

The end of semester is often too late to make changes so I have made a habit of running a fast feedback session early in the course using a survey quiz in Canvas. This can surface issues that are detracting from student learning and also gets students to focus on their own behaviours.

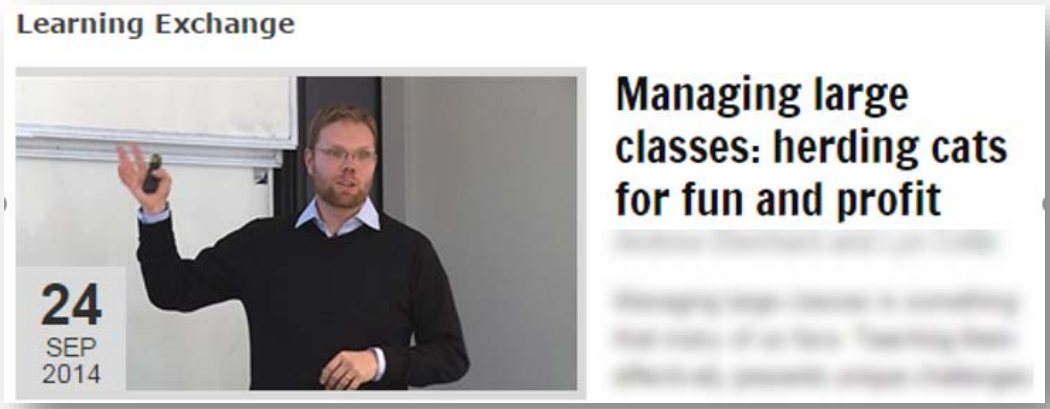
I also believe that it is important to have my colleagues review my work. As such, I often ask colleagues to sit in and review my lectures. I've had multiple "official" peer reviews done by our University of Auckland Business School Peer Review Panel in the last few years.

> *Even before the class started it was obvious that Andrew was in his element. While waiting for the last students to come Andrew was walking around and talked to students in the first few rows, thereby building a bridge and signalling to students that he was interested in interaction and engagement with them. I found Andrew's class highly engaging and it is my impression that students would have gained a good overview of the content that was discussed. In my assessment, Andrew showed great passion and skill in generating his students' interest in the topic that he presented.*
>
> Dr Bodo Lang
> Head of Marketing, UABS, 2014

I have also been fortunate to have my teaching and learning recognised via a number of awards:

Teaching Awards Received:

I am an assiduous attender of learning and teaching workshops, participating in over 50 events in the last 3 years and presenting at over 20.



However, it is not enough to just attend. I actively apply techniques I hear about in workshops to my own teaching. An example is the application of Learning Journals to INFOSYS 110 Business Systems. I attended a CLeaR Teaching and Learning Workshop run by Dr Peter Arthur from the University of British Columbia where he discussed various techniques for improving student outcomes in the first year by enhancing their metacognitive abilities. One of the techniques he mentioned was the use of learning journals. I also attended a session on learning journals with another of my colleagues, Dr Peter Smith, who introduced me to the work of Daudelin. These presentations intrigued me so I consulted with Dr Tessa Owens, from our Innovative Learning and Teaching Group, and she directed me to the works of McKeachie and Svinicki (2013), Raelin (2000), and Orsmond (2004). These discussions, and readings, reinforced my instinct that reflective learning journals would help my students.

The journals were incredibly useful, giving me a real window into what my students were thinking and doing. For example we always have a number of students who do not attend class. I had assumed that they were not getting value from my lectures, but the learning journals suggested that many students did not come to class because they found my lecture recordings a much more effective learning tool. They could pause the recording to take notes, look up something they were unclear on, or refer to a concept in a dictionary.

This has caused me to reflect on my practice around the use of lecture recordings and make sure they are available to students as soon as practicable. I am also working with a PhD student on a project to enhance the analytics we get from our lecture recording system to further understand student behaviour. Student performance improved after the journals were introduced; fewer students failed and more students got As than in the previous semester. I also saw a 10% increase in the number of students who reported that “This course helped me to develop my thinking skills” (from 73% agree to 83% agree) in our end of semester SET scores. More tellingly, in terms of engagement, was that the response rate went from 20% in the previous semester to 82%. The students also appeared to find them useful.

The learning journals were surprisingly helpful to my learning, although I was reluctant to complete them I did find that helped me reflect on my performance and set myself goals.

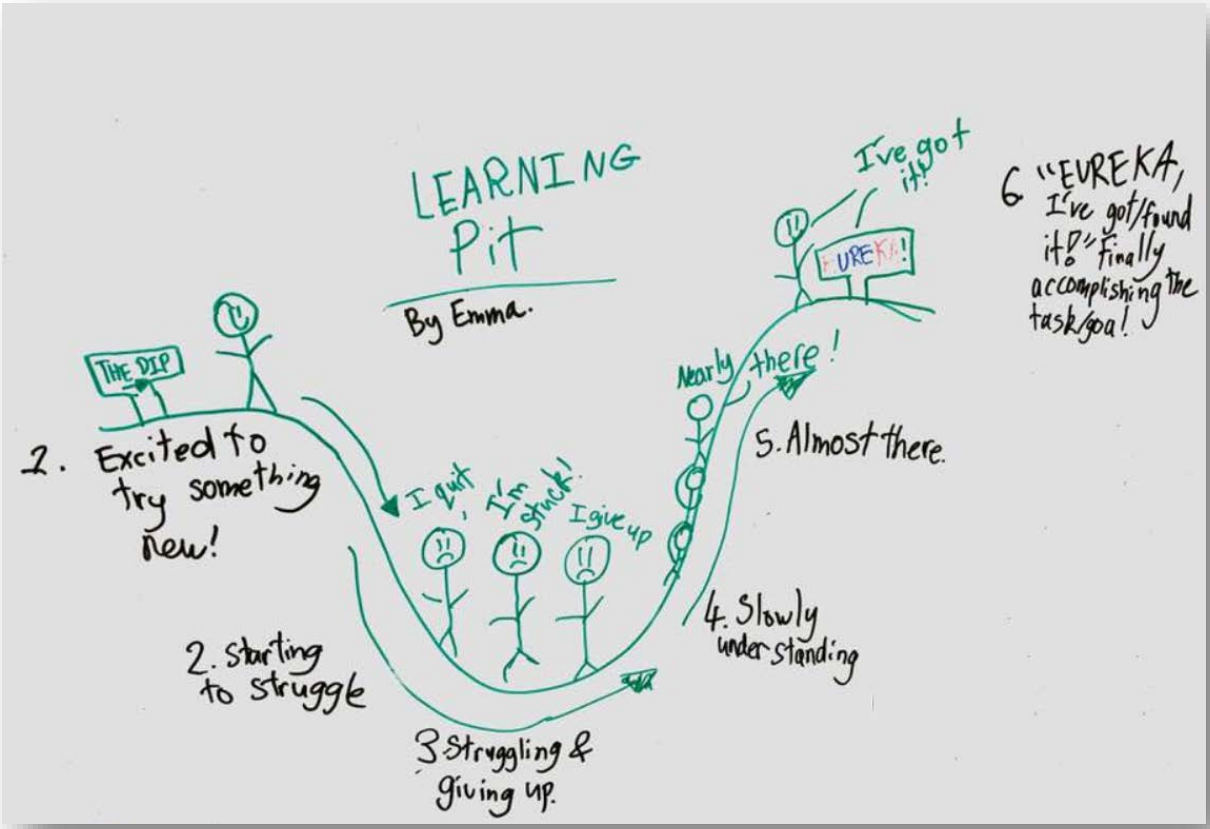
INFOSYS110 student, 2017

I used this application of learning journals to INFOSYS 110 as one of my case studies of effective teaching practice when I applied to be recognised by the Higher Education Academy. HEA Fellowship is an international recognition of a commitment to professionalism in teaching and learning in higher education and demonstrates that your practice is aligned with the UK Professional Standards Framework. I was awarded a Senior Fellowship in 2018.

As part of my PD I am continually on the lookout for tools and techniques that will help my students to engage with their learning in an experiential fashion. For example, I became certified as a Lego Serious Play facilitator in 2017 and now run workshops using this technique.

CONCLUSION

My 10 year old daughter visited my office last year and, totally unprompted by me, drew this on my office whiteboard.



I'm finishing with this as it encapsulates why I jump out of bed and come to work each morning. I love this. I love helping students who are struggling to reach that "Aha!" moment when they finally climb out of the pit of learning and exclaim "I've got it!"

I have been truly blessed to spend my career at the University of Auckland. I have learnt far more than I have taught and I consider it a real privilege to be able to dedicate my life to teaching.

My students may change, my tools and techniques may change, but my love of teaching, my students and my colleagues will never change.

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