

# Planning for the Online Learning Future

Keeping the best bits of online learning after COVID-19

**Tom Worthington**, MEd FHEA FACS CP IP3P

10 December 2021, at EdTechPosium, Canberra



# SARS-CoV-2 Not a “Black Swan Event”

2003: SARS-CoV-1 outbreak closed Singapore campuses.

2006: Singapore Polytechnic, & NUS instituted annual “e-Learning Week” (Chandran, 2010).



## NUS E-learning Week

**Week 8 for all Faculties and Schools**  
(9<sup>th</sup> March – 13<sup>th</sup> March 2014)

# Prepare for a Pandemic Online

“On 29 April 2009 the Director-General of the World Health Organization (WHO), raised the level of influenza pandemic alert from phase 4 to phase 5. All countries were advised to immediately activate their pandemic preparedness plans to combat Swine influenza.

In this assignment you will examine web sites used for providing advice to the public about influenza and design a prototype web site using the techniques learnt in the course. ...

Deadline: 6pm Friday 22 May 2008.”

From: Assignment 2, Networked Information Systems (COMP2410/6340), ANU 2008  
<https://blog.tomw.net.au/2009/05/designing-influenza-pandemic-web-site.html?m=1>

"Using mobile and web for an influenza pandemic response"

SAHANA  
SOFTWARE FOUNDATION

**Sahana Meetup**

7.5.2013  
5.30PM to 6.30PM

All are Welcome!

Tom Worthington (<http://www.linkedin.com/in/tomworthington>) will be speaking on the topic of "Using mobile and web for an influenza pandemic response", drawing from his expertise and experiences in the fields of disaster management and computer science.

The session will be held at the Virtusa Auditorium

Hosted By  
**virtusa**  
Accelerating Business Outcomes

# Research Intensive Universities Teaching Online is Not New



Engaging India, ANUx on edX, Video, 2014 [https://youtu.be/h2p20wDbr\\_Y](https://youtu.be/h2p20wDbr_Y)



Engaging India, edX Online Course, ANU, 2014  
<https://courses.edx.org/courses/course-v1:ANUx+ANU-INDIA1x+4T2015/c8d7461010484f83b75c5e6f957a91b5/>

# Warning to Teach International Students Online in 2017

“International tensions could disrupt the flow of students to Australia very quickly.”

From MEd ePortfolio, Tom Worthington, at EdTechPosium, UNSW Canberra, 2017



ADFA Camouflage Glass, by King Glass, Shenzhen <http://kghglass.com/project-details/adfa-camouflage/>

# But How to Engage Them?

- ‘Online students are less engaged, less likely to complete and less satisfied,
- Need to design engagement with university & other students into the assessed curriculum,
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UBC Irving K Barber Learning Centre,  
Photo by Tom Worthington CC-BY 3.0 2015

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"With university leaders scrambling to regroup amid the operational and financial chaos caused by COVID-19 ...

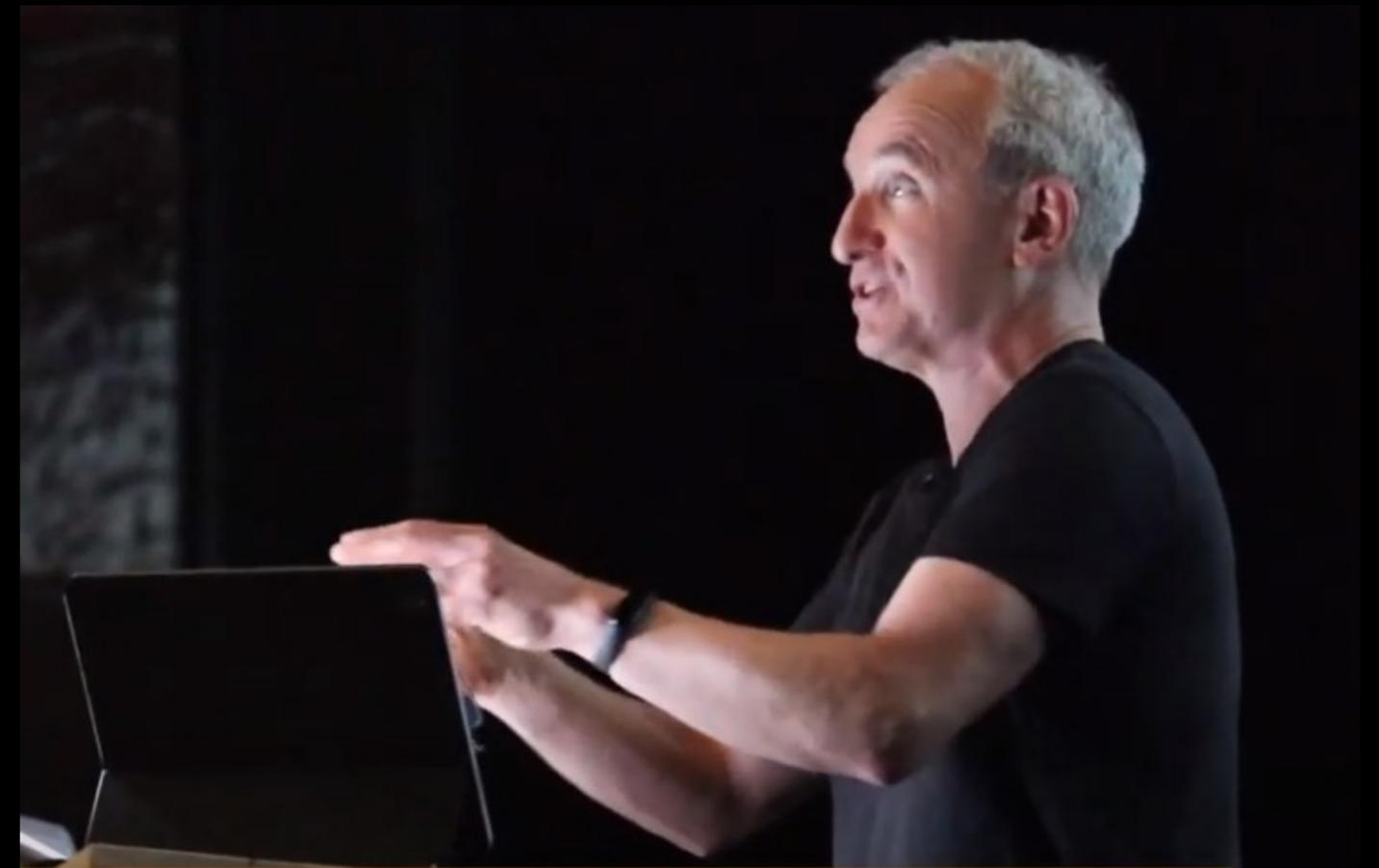
What remains unclear, however, is exactly how to crack the student experience X factor that delivers the kind of **transformative experience** students are looking for."



From: Creating an X-factor Experience, Gary Martin, Business News, 22 August 2021

# The Sage Streamed from the Stage

Prof. Steve Blackburn teaching Structured Programming, with interactive live-streamed lectures, from ANU Manning Clark Hall.



Professor Steve Blackburn, ANU

See: Teaching computer science in a pandemic, Video, ANU CECS, Sep 24, 2021 [https://www.youtube.com/watch?v=m24QSI\\_5oA8](https://www.youtube.com/watch?v=m24QSI_5oA8)

# With the Groom on Zoom



Prof. Steve Blackburn & tutor Leopold Zhou

# Support Crew



**Dr Kim Blackmore, Director, ANU Centre for Learning & Teaching**

# Global Design

## 3-in-1 Hybrid Learning:

1. Online asynchronous course,
2. Add synchronous events,
3. Add classroom events.



Holly Hapke,  
University of Kentucky.

Hapke, H., Lee-Post, A., & Dean, T. (2020). 3-IN-1 HYBRID LEARNING ENVIRONMENT. *Marketing Education Review*, 1-8. <https://doi.org/10.1080/10528008.2020.1855989>

# Team Teaching in ANU TechLauncher

Four workshops per semester for ANU Computer Project students, preparing a capstone reflective portfolio.

Designed for hybrid mode.

The team:

**Course convener:** Dr Charles Gretton, sets the context

**Instructor:** Tom Worthington, manages the students

**Subject matter expert:** Tempe Archer, delivers the workshop.

**200 Students:** Peer review.

**13 Tutors:** Assess their student's portfolios.



**Dr Charles Gretton,  
Convener**



**Tempe Archer,  
ANU Careers Consultant**

Reference: Worthington, T. (2019, December). Blend and Flip for Teaching Communication Skills to Final Year International Computer Science Students. In 2019 IEEE International Conference on Engineering, Technology and Education (TALE) (pp. 1-5). IEEE. <https://doi.org/10.1109/TALE48000.2019.9225921>

# The Lexus and The Learner



2007 Toyota Camry and Lexus ES, built on the same car platform ([Wikipedia, 2021](#))

# More Information

For notes and references:

“Keeping the best bits of online learning after COVID-19” (Blog Post), Higher Education Whisperer, 2021

<https://blog.highereducationwhisperer.com/2021/11/keeping-best-bits-of-online-learning.html>



# Planning for the Online Learning Future

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**Tom Worthington**, MEd FHEA FACS CP IP3P

10 December 2021, at EdTechPosium, Canberra



Planning for the Online Learning Future: Keeping the best bits of online learning after COVID-19 by Tom Worthington, at Ed-Tech-Posium, in Canberra, 10 December 2021.

In this presentation I will detail how in 2019, I designed a learning module for ANU computer project students so that it could quickly be converted from campus to online delivery, in an emergency. This contingency was then activated due to the COVID-19 pandemic in 2020. The same learning design can be used into the future for campus, blended and online students.

Like many who teach, I had to quickly move from the classroom to online learning in early 2020, due to COVID-19. However, as part of my studies in distance education from 2013 to 2017, I looked at how e-learning could be used by Australian universities for mixed classes of domestic and international students. This included planning to use online learning as an emergency measure in the event an international crisis which prevented students getting to campus. While I had not anticipated a pandemic, having considered the policy, tools and techniques for an emergency move online proved useful in dealing with COVID-19.

Advocating elearning be ready in case of a crisis has been frustrating. Some academics were horrified by the idea of distance education, and refused to consider an international crisis could stop students getting to campus. However, the pandemic was not, as some have claimed, a “Black Swan Event”, which could not have been anticipated, or prepared for. This was a crisis which was expected and is unlikely to be the last which keeps students from campus. Having seen they now have an online option, students will consider this the default for their education, just as they now do for many aspects of their lives. Australian universities need to adjust to this reality to remain viable.

# SARS-CoV-2 Not a “Black Swan Event”

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Chandran, R. (2010, May). National University of Singapore's Campus-Wide ELearning Week. In *Global Learn* (pp. 2062-3302). Association for the Advancement of Computing in Education (AACE). URL <https://cpb-us-w2.wpmucdn.com/blog.nus.edu.sg/dist/0/119/files/2011/03/national-university-of-singapores-campus-wide-elearning-week.pdf>

Some commentators have described the COVID-19 pandemic as a *black swan event*\*: completely unexpected, but something which in retrospect, we should have anticipated. However, emergency and health workers have been expecting a flu-like pandemic for decades. The virus which causes COVID-19 is called "SARS-CoV-2". The similar SARS-CoV-1 was identified in 2003 outbreaks in East Asia resulted in universities such as National University of Singapore, having drills to practice online teaching to students at home in a pandemic emergency.

The term *Black Swan Event* comes from the idea that Europeans had never seen a black swan and so assumed there were none. After seeing black swans in Western Australia, it was, in retrospect obvious they could exist. However, Australian universities were warned about the possibility of the sudden loss of international students in particular, but failed to prepare for this with online learning.

eLearning Week Video, NUS, 2014

<https://web.archive.org/web/20150329201119/https://wiki.nus.edu.sg/download/attachments/81009836/elearning-week-2015.mp4>

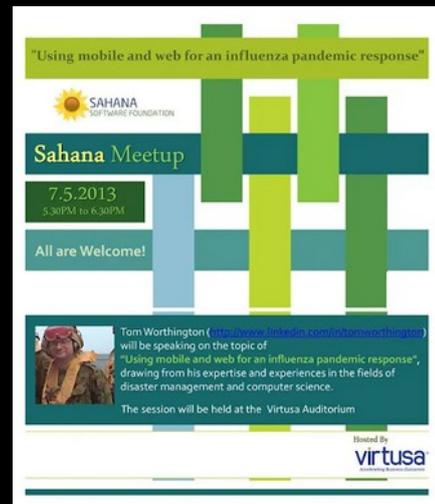
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## Preparing Online for a Global Pandemic.

After working at the Department of Defence on dealing with emergencies, using computers and the Internet, I kept up this interest at the Australian National University, and through membership of the Sahana Foundation for open source disaster software. Student projects explored using the Internet, and mobile phones, for emergencies, such as a global pandemic, using accessible web page design compatible with desktop and mobile devices, for low bandwidth links.

## References

Ramindu Deshapriya, Sahana Meetup with Tom Worthington, Colombo, July 1, 2013  
<https://sahanafoundation.org/sahana-meetup-with-tom-worthington-at-virtusa-sri-lanka/>

Tom Worthington, Wireless Web System for an Avian Influenza Pandemic, Australian Government Web Standards Group, 11 May 2006, Canberra, CeBIT Australia, 9 May 2006, Sydney, ANU Course "Tools for New Media and the Web", ANU, 26 March 2007.  
<https://www.tomw.net.au/2005/wd/sahana3.shtml>

ANU, Assignment 2, Networked Information Systems (COMP2410/6340), ANU2008  
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### Research Intensive Universities Teaching Online

In 2014, ANU offered two edX online courses, on India and astrophysics. The course “Engaging India” was bilingual (English and Hindi), in asynchronous format. The courses had videos with high production values, plus carefully thought out learning design.

I suggested this format could also be used by Chinese and Australian students studying online together (Worthington, 2014).

### References

T. Worthington, "Chinese and Australian students learning to work together online proposal to expand the New Colombo Plan to the online environment," 2014 9th International Conference on Computer Science & Education, 2014, pp. 164-168, doi: [10.1109/ICCSE.2014.6926448](https://doi.org/10.1109/ICCSE.2014.6926448)

Australian National University, Online Course : Engaging India, 2015

<https://scholarship-positions.com/australian-national-university-online-course/2015/11/03/>

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At EdTechPosium 2017, I talked about dogfooding international online education, by spending three years as an international online student. In this I cited my Med e-portfolio, which ended by recommending Canberra’s universities be ready to teach international students online, if they were unable to get to Australia in an emergency. The emergency I had in mind was not a pandemic, but international tension in the Indo-Pacific region.

### References

Tom Worthington, “Learning to Design for International Students by Being an International Online Student”, for EdTechPosium 2017, 30 October 2017

[http://www.tomw.net.au/technology/it/dogfooding\\_online/](http://www.tomw.net.au/technology/it/dogfooding_online/)

Tom Worthington (2016), MEd(ED) ePortfolio, Athabasca University.

[http://www.tomw.net.au/masters\\_eportfolio/conclusion.shtml](http://www.tomw.net.au/masters_eportfolio/conclusion.shtml)

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UBC Irving K Barber Learning Centre,  
Photo by Tom Worthington CC-BY 3.0 2015

My MED in Open, Digital and Distance Education at Athabasca University (Canada) was entirely online from Australia. As an online student I was *less engaged*. There needed to be *assessed* university and group activities in the curriculum to counter this. These would also help students who were officially "on-campus" but actually rarely attending class.

See: "Dogfooding: Learning to Design for International Students by Being an International online Student", Tom Worthington. , EdTechPosium 2017, 30 October 2017 UNSW Canberra. [http://www.tomw.net.au/technology/it/dogfooding\\_online/](http://www.tomw.net.au/technology/it/dogfooding_online/)

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In 2019 I designed my learning for ANU students in “chunky” blended mode (Worthington, 2019). One reason was to allow a switch to full online in an emergency. In early 2020 I was preparing to help teach new tutors at the Australian National University College of Engineering and Computer Science, when called to an emergency meeting of staff. We were told the university faced an "existential threat" from what came to be known as COVID-19 and asked if we could teach and assess students trapped overseas online. Several of us had experience with online learning, and being in the computer science school, we were well equipped, so said "yes". I was able to give the tutors a brief introduction to online techniques for teaching and assessment. As it became clear the situation was not going to get better any time soon, I made small changes to my already blended materials, to make them fully online. In mid 2021, in anticipation of a return to the classroom for some students, I made further small changes, to allow for hybrid mode, with some students online and some in the classroom, linked together. Unfortunately the return to campus was not possible in 2021, and in all I helped teach several hundred students per semester, over four semesters. The hybrid option remains available for 2022. This is documented in my blog, "Higher Education Whisperer", an article on the Athabasca University Website, and conference papers.

## References

Cochrane, T., Birt, J., Cowie, N., Deneen, C., Goldacre, P., Narayan, V., Ransom, L., Sinfield, D. & Worthington, T. (2020). A collaborative design model to support hybrid learning environments during COVID19. ASCILITE's First Virtual Conference. Proceedings ASCILITE 2020 in Armidale, pp.84-89. University of New England, Armidale. <https://doi.org/10.14742/ascilite2020.0119>.

Narayan, V., Cochrane, T., Aiello, S., Birt, J. R., Alizadeh, M., Cowie, N., ... & Cowling, M. A. (2021, November). Mobile learning and socially constructed blended learning through the lens of Activity Theory. In ASCILITE 2021: 38th International Conference on Innovation, Practice and Research in the Use of Educational Technologies in Tertiary Education: Back to the Future (pp. 166-171). Australasian Society for Computers in Learning in Tertiary Education. <https://doi.org/10.14742/ascilite2021.0123>

Worthington, T. (2019, December). Blend and Flip for Teaching Communication Skills to Final Year International Computer Science Students. In 2019 IEEE International Conference on Engineering, Technology and Education (TALE) (pp. 1-5). IEEE. <https://doi.org/10.1109/TALE48000.2019.9225921>

## Post-COVID X-factor: A Satisfying Blended Experience

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What remains unclear, however, is exactly how to crack the student experience X factor that delivers the kind of **transformative experience** students are looking for."



From: Creating an X-factor Experience, Gary Martin, Business News, 22 August 2021

### X-factor for Student Satisfaction

Gary Martin, chief executive officer of the Australian Institute of Management WA, recently asked what gave a quality experience for Australian university students. After scrambling to quickly deliver online courses, universities around the world are asking: what next? Do they return to pre-COVID campus based teaching, provide online courses alongside campus ones, blended learning which has some online and some face to face elements, or hybrid with classroom linked online.

As someone who was trained to teach online, and spent seven years as an online student, I suggest students will expect courses to be available online as a matter of routine. However, they will also expect to have the option of face to face classes, where they can work with others, under the guidance of experts. What will distinguish a university is the quality of interaction provided, with students and staff.

As an online student I found I could manage to study by following the materials provided, doing the readings and exercises. However, it was a very lonely, frustrating experience. What stood out were the occasions when I met and worked virtually with my fellow students. Events with instructors were a highlight. The very rare occasions when I met my instructors were a bonus, as they were on the other side of the Pacific Ocean, 17,000 km away.

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Prof. Steve Blackburn teaching Structured Programming, with interactive live-streamed lectures, from ANU Manning Clark Hall.



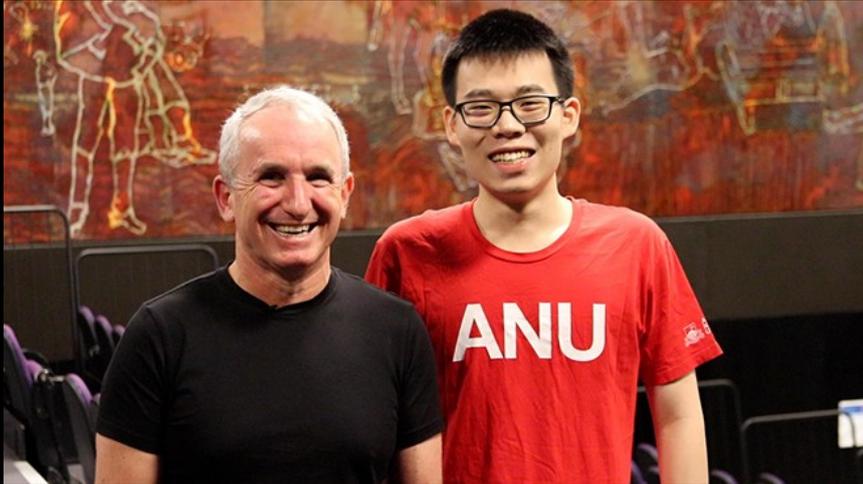
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## The Sage Streamed from the Stage

Professor Steve Blackburn and the team at the Australian National University College of Engineering and Computer Science have shown the X-factor, in the video "Teaching computer science in a pandemic". I suggest, as the video demonstrates, student satisfaction can be improved through personal attention, enhanced with technology. Steve is a distinguished academic, who is also a good communicator, making him a Sage on the Stage. Steve can present, and discuss material in a way which engages the audience. However, he makes it look deceptively easy. Presenting a good lecture to a room full of students is difficult. Projecting your personality to students online is even harder. Doing both at the same time is very difficult. Not everyone will be able to reach Steve's level, but these are skills which can be learned, and *practised*, to make a *Sage Streamed from the Stage*.

# With the Groom on Zoom



Prof. Steve Blackburn & tutor Leopold Zhou

In the video “Teaching computer science in a pandemic”, Professor Blackburn emphasises the role of tutors. Called, Teaching Assistants in North America, they are more important to learning than the professors. While the professor takes centre stage, the tutors work with smaller groups of students, assisting in lectures, in tutorials, workshops and laboratories, to guide students investigating topics and practice skills. Here again, tutoring is a skill which takes training and practice, with a extra layer of complexity when carried out online, where they might be called the groom on Zoom.

# Support Crew



Dr Kim Blackmore, Director, ANU Centre for Learning & Teaching

Backing up the professor and tutors are many other staff. Producing courses, especially online ones, requires educational designers, video makers, and other specialists. Learning designers work with the subject matter experts to structure the learning and assessment, while video makers polish the recorded presentations

The Australian National University has a Centre for Learning and Teaching, headed by Dr Kim Blackmore, to support staff in the colleges. These staff have been busy during the pandemic, with a crash program to move courses online. But they are always busy, so if you need help, give them plenty of notice.

Both classroom based and online learning also require technical support personnel to keep the audio visual systems, software and networks working. The last decade has seen new software to deliver learning. When working properly, and used as intended, these systems lighten the burden for students and teachers.

## Global Design

### 3-in-1 Hybrid Learning:

1. Online asynchronous course,
2. Add synchronous events,
3. Add classroom events.



Holly Hapke,  
University of Kentucky.

Hapke, H., Lee-Post, A., & Dean, T. (2020). 3-IN-1 HYBRID LEARNING ENVIRONMENT. *Marketing Education Review*, 1-8. <https://doi.org/10.1080/10528008.2020.1855989>

Over the last eighteen months, we have seen heroic efforts to rapidly convert campus based classroom courses for online delivery. Now there is discussion of a return to the classroom. But do we abandon online learning completely? I suggest we can support both, and let the student select their preferred mix.

One approach is by Hapke, Lee-Post, and Dean (2020), with their 3-in-1 Hybrid Learning. Rather than divide students into distance and campus groups, the students all receive the same online course, supplemented with synchronous hybrid events. For these events students can either be in the classroom or online.

The hybrid approach, where the instructor has some students in the room, and some online at the same time, is more difficult to manage. However, it does provide the lecturer with the opportunity to still be the "sage on the stage". The student has the sense of getting a university experience.

# Team Teaching in ANU TechLauncher

Four workshops per semester for ANU Computer Project students, preparing a capstone reflective portfolio.

Designed for hybrid mode.

The team:

**Course convener:** Dr Charles Gretton, sets the context

**Instructor:** Tom Worthington, manages the students

**Subject matter expert:** Tempe Archer, delivers the workshop.

**200 Students:** Peer review.

**13 Tutors:** Assess their student's portfolios.



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Tempe Archer,  
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Reference: Worthington, T. (2019, December). Blend and Flip for Teaching Communication Skills to Final Year International Computer Science Students. In 2019 IEEE International Conference on Engineering, Technology and Education (TALE) (pp. 1-5). IEEE. <https://doi.org/10.1109/TALE48000.2019.9225921>

An example of team teaching are the hybrid workshops, for the Australian National University Tech-Launcher program. Workshops are provided each semester for Computer Project students, to help them prepare a capstone reflective portfolio.

The workshops were designed to be delivered in a classroom, supported by asynchronous activities and materials delivered using a learning management system, as described in a published paper (Worthington, 2019).

In 2019, provision for fully online delivery was included, in case an emergency kept students away from the campus. This contingency was activated in 2020, in response to the COVID-19 Pandemic. No changes to content, activities, or assessment, was required for the switch from classroom, to online delivery.

At each workshop, the Course Convener, Dr Charles Gretton, sets the context. The instructor, that is me, manages the students, while the subject matter expert, Tempe Archer, delivers the workshop content. Tempe tells me when to put the students into Zoom rooms for group work, and bring them back. I relay queries from the students in the chat forum. After a workshop, students complete a small writing task for 1% of their grade, and provide peer feedback for another 1%. Then thirteen tutors help the 200 students with their portfolios, and assess them at the end of semester, for 14% of their grade.

## Reference

Worthington, T. (2019, December). Blend and Flip for Teaching Communication Skills to Final Year International Computer Science Students. In 2019 IEEE International C  
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# The Lexus and The Learner



2007 Toyota Camry and Lexus ES, built on the same car platform ([Wikipedia, 2021](#))

Universities across the world are now struggling to come up with a post-COVID education strategy. On the one hand online learning has shown education can be provided efficiently anywhere, but there is a desire to provide a *personal* engaging experience. Thomas L. Friedman explored a similar dilemma in "The Lexus and the Olive Tree: Understanding Globalisation" (1999). Lexus motor vehicles represented the desire for the products of globalisation, and the olive tree local tradition. Friedman argued that globalisation would win out, but I suggest it is possible to have both.

Engineering a car for global standards takes hundreds of specialists years of work, and costs billions of dollars. So Toyota design a common "platform", for a range of models, from low cost to luxury ones. Luxury models are hand finished with some premium components, to give a sense of something beyond the ordinary.

The approach of an engineered platform, with personal touches added, can be applied to learning. A course can be created by a team of educational designers and subject matter experts, for delivery world wide, to meet formal government and professional standards. The standard course can be provided asynchronously, with personal touches added by teaching staff, online and face to face (the sages on the stage, and grooms on Zoom). This way the student gets the benefit of quality design, plus the human touch.

## More Information

For notes and references:

“Keeping the best bits of online learning after COVID-19” (Blog Post), Higher Education Whisperer, 2021

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