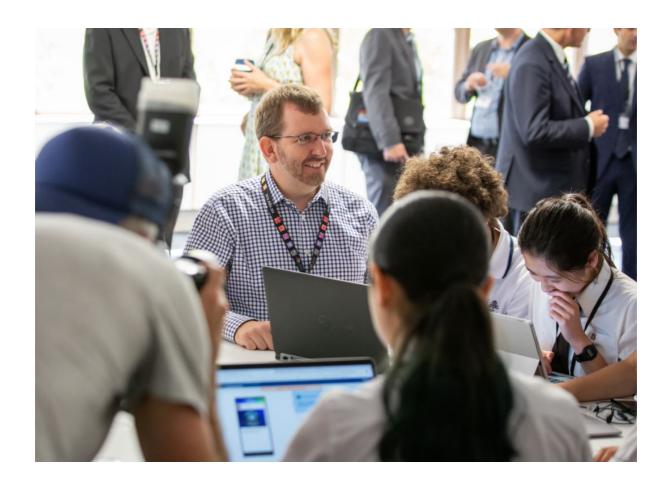# Towards a blended education system in Australia

As nearly a million Australians deal with job losses, and unemployment creeps up to 7.1 per cent, it is hard to find the positives of COVID-19. Yet over the past few months, academics, journalists and commentators have pointed to the silver linings of human adaptability, community solidarity, family connection and personal resilience, in the face of this global pandemic.

The importance of online learning as part of the teaching mix has also been recognised – despite disparate experiences and the unfairness of the digital divide. And online learning is not going away.

Even though all states have sanctioned the return to school full-time, we need to embrace disruption, because it will continue – whether it's COVID-19 phase two, bushfires and floods, new technologies or economic downturns and funding cuts. These scenarios require contingency planning and taking a strategic rather than reactive approach to change.

In a recent article, World Economic Forum contributors reminded us that natural disasters and pandemics like COVID-19 can be a tipping point for the creation and rapid adoption of innovation.

An interesting local example of disaster-led innovation is the "million jobs plan" put forward recently by [Beyond Zero Emissions](#) for the creation of a thriving green economy. Could the sudden shift to remote learning be the catalyst to creating a more effective method of educating students? Could it become the 'new normal'?

My answers to these questions are Yes and Yes. But they warrant some qualification and further consideration.

I have been immersed in online learning and teaching computer science for over two decades – spanning academia, online learning platform development, classroom digital technology resources and as an author of the Australian Curriculum: Digital Technologies (AC:DT).

Most recently, my teams and I have been at the frontline helping teachers and students embrace the online learning paradigm that they have had to take on –

willingly or reluctantly – in 2020. Given this experience, I believe there are three critical issues that impact the success of online learning:

1. We must recognise that online learning is not, and will never be, the silver bullet for education.
2. Online learning works best in conjunction with classroom learning: that is, in a blended learning environment.
3. In addition to students having access to technology, we must have well-trained and well-resourced teachers – not a strategy to replace them.

The case for a blended model of education.

The efficacy of a blended model of education is most recently supported by the Chief Scientist Alan Finkel's [Report on 'Differential learning outcomes for online versus in-class education'](#).

While Dr Finkel acknowledges that remote learning (as it exists today) could result in poorer educational outcomes for nearly half of Australian primary and secondary students, the report also presents evidence that blended learning may be as effective as classroom learning.

Research from the UK, USA and Australia found strong or even superior educational outcomes from blended learning compared to classroom *or* online learning.

During COVID-19 isolation, parents witnessed in their own homes how challenging it is for teachers to engage 20+ students, and many have a new-found respect for educators. Parents may have also seen that online learning allows students to continue progressing and advancing *at their own pace*, through constant feedback and cues that invite students to continue with similar challenges and questions as they go.

This is actually one of the key points that is addressed in the current [NSW Curriculum Review](#) – that we should allow students to progress through the

curriculum as they master new concepts and skills, rather than in a linear, age-based way.

Combining the best of online learning with personalised support means that teachers can provide hands-on support to those students needing extra help. For example, we have recently updated our bi-annual National Computer Science School (NCSS) Challenge in July to include a Live Classroom View, which enables teachers to see students working through problems in real time.

We have also included a tutor interface for teachers to chat remotely with students while seeing their work, allowing teachers to support students who may be struggling.

In a blended education model, there is a balance between classroom learning and online activities that can be more engaging with multimedia, quizzes and gamification. If we take a classic maths textbook scenario, students are expected to check their work against answers provided in the back of the book. This relies on the student's interest in the subject – particularly in a homework setting.

The online equivalent of this process would see a student automatically directed to further exercises, quizzes or different challenges that reinforce what they have learned.

Why we need well-trained and well-resourced teachers.

There needs to be a cultural shift in this country to appreciate the importance and value of teachers. That means investing in their professional development (PD) so they are confident and engaged, and remunerating them appropriately.

There have been many articles in mainstream and education media pointing out how COVID-19 spotlighted the shortcomings of schools in the delivery of online learning, and the digital divide between state versus private schools, and regional versus urban. And rightly so: we must get this right, as I discuss. We are asking a lot of teachers now.

Ultimately, it is the confidence and ability of educators to teach Digital Technologies that makes the difference; and to be confident and engaged, teachers must have access to both quality PD and resources.

Given how resource and time-poor teachers are, we have focused on creating classroom challenges and activities that also count towards their professional development (PD). In our NCSS July Challenge, we have included 10 hours of NESA registered Professional Development per stream (up to 50 hours of PD) – so teachers not only deliver parts of the AC:DT, they develop new skills and training as well.

With more confident and highly skilled teachers, parents and employers, in turn, can be confident that students are well-prepared for the workforce of the future.

In fact, when we think about how many sectors are increasingly requiring technology skilled professionals, it would be wise for parents to encourage their young people to build digital literacy skills because it makes vocational and economic sense.

Finally, I return to the digital divide. Governments and educators need to take classroom technology seriously: poor Internet and/or WiFi connections, insufficient hardware, and a scarcity of system administrators to support teachers will set up the education system for failure.

Considering disruption will continue, it should be non-negotiable that all schools and homes are the key investment priority for technology, so that the digital divide is bridged where it counts most: at the education frontline.

But we shouldn't stop there: we also need to truly revere our teachers and understand that it is professional development that will make the difference in their confidence and enthusiasm to rise to the challenge of teaching online learning within a blended education model – during and after COVID-19.

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Science School, the largest computer science school outreach program in Australia, and a co-founder of [Grok Learning](#) – an Edtech startup that aims to teach children everywhere to learn to code. He was an author of the Australian Curriculum: Digital Technologies, the new national computing curriculum.