

Recipient Details

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Responses

Curriculum and assessment

There are two major priorities when it comes to curriculum and assessment:

1. Increasing the profile and resourcing of Science, Technology, Education and Math (STEM) subjects across all sectors of education. STEM competencies will continue to be in high demand in the future. It is estimated that 75% of the fastest-growing occupations require STEM-related skills and experience and 90% will require digital skills.

2. Increasing the focus on entrepreneurship in rural and regional education. The importance of entrepreneurial skills also cannot be underestimated. If regions are to create new jobs to replace those that are being automated they will almost certainly need to tap into the start-up economy and ecosystem. There are two reasons why entrepreneurship is important and needs to be taught in all three sectors (K12, TAFE and higher education):

- Entrepreneurship skills will be critical for people to navigate an increasingly freelance economy. People will move away from full-time roles – as an example, an Australian university revealed that approximately half of students surveyed wanted to start their own business rather than get a traditional salaried position. People in this freelance economy will need entrepreneurial skills such as problem-solving, calculated risk-taking, sales and networking to navigate a volatile job market.
- Entrepreneurial skills will equip people to create the next generation of start-ups. While entrepreneurs are thought to have some inherent characteristics (i.e. more driven and single-minded, and more likely to take risks), the evidence suggest that entrepreneurship can absolutely be taught. We need to equip our future generations – as well as current employees – to create value-generating businesses that will provide a basis for future employment. The need for these skills is arguably even more important in rural, regional and remote areas, which need to find new sources of economic value.

Rating: 7

Teachers and teaching

Teachers and teaching are critical to Australia's economic success.

We see two critical priorities in terms of teachers and teaching:

1. Innovating around how curriculum is taught, not just what is taught. Winning the hearts and minds of staff – including teachers, administrators and leaders – will be critical to effective implementation of a contemporary, digital-enabled approach to rural and regional education.

The latter is particularly important given the use of proven technologies is a major contributor to uptake, and that technology needs to be positioned as a mechanism for delivering real educational value, not just an augmentation tool.

2. Improving standards of digital literacy and technology-enabled pedagogy (capability)

Motivation and willingness to implement technology is essential, but not sufficient to achieve broad-based uptake. To ensure teachers not only attempt initial implementation, teachers require digital literacy skills as well as the capacity to adapt pedagogy to technology. Professional development is an essential component of any school, system and institute change effort, but is particularly critical in the implementation of live video technology that introduces a new immersive approach to teaching and learning.

Rating: 7

Leaders and leadership

Leadership is absolutely vital if schools - and regional communities - are to embrace change and take advantage of available technologies. This includes leadership at a government as well as school and community level.

Rating: 7

School and Community

School and community are clearly critical.

Cisco's Digital Schools Network was recently developed to drive collaboration between schools

Getting students to collaborate is critical, but so is having education institutions from all three sectors do the same. Cisco recently announced the establishment of a Digital Schools Network program to help schools showcase and make more informed decisions about the use of technology in their schools. The network is based on Cisco's Spark platform and has a number of important elements:

- The network's focus is on improving education and showcasing best practice, not upgrading technology.
- Schools will have access to global education / technology experts who can counsel them on design and implementation considerations.
- University partners have joined the network to provide virtual excursions to students in rural and remote locations.
- Planned expansion into Asia so Australian schools can expand their networks and communities or practice.

The network is an example of how digital tools can leverage the knowledge and capability of the collective – something we need to strive for in rural and regional education more generally. It also demonstrates that schools need to be the foundation stone upon which rural and regional education is built.

Rating: 6

Information and Communication Technology

Most of the focus in terms of educational technology has tended to focus on the end device – the laptop or desktop computer. In contemporary education, technology's greatest potential is to create and sustain communities (of teachers, students and parents). Collaboration platforms are now vital pieces of education infrastructure for regional schools and institutions, but may be financially out of reach. Cisco's work through the Digital Schools Network has demonstrated a thriving community of schools that want to collaborate and it's important that education systems and individual schools make strategic investments in these underpinning platforms rather than treating them as a 'bolt on', consumer-grade piece of software.

In some ways the most telling impact of technology is that it is no longer just a teaching augmentation tool. There is recognition that traditional, non technology-enabled training and teaching pedagogies are less effective than they once were. Latest research suggests that traditional lecturing techniques (such as the 'stand and deliver' technique) are less effective with the current generation of students and particularly in STEM subjects. One study found that traditional lecture techniques were likely to increase failure rate by a factor of 1.5 compared with more active learning techniques.

While many schools, TAFEs and universities are embracing new pedagogies, pockets of resistance remain. One of the major sources of resistance is the education workforce. Integration of technology into the training process often involves significant change to processes, attitudes, course materials and even the fundamental role of trainers. Take, for example, the introduction of flipped classrooms where students view the 'lecture' beforehand then spend class time applying and testing their knowledge. The educator, in this instance, moves from being a subject matter expert with evidence to a facilitator and broker. Any investment in new technology also needs to be accompanied by investment in professional development and change management.

Rating: 7

Entrepreneurship and schools

Entrepreneurship needs to be a foundation on which sustainable regional communities are built. While regional areas have done a good job of building their start-up base organically there is a role for government to a) demonstrate to young people that it a viable future path, and b) provide support for them to realise their aspiration.

Given the additional challenges faced by regional students (including limited access to accelerator and incubator infrastructure) there is merit considering scholarships and internship programs for young entrepreneurs. La Trobe University is an example of a university that is trying to ensure that its innovation programs deliver benefits to regions as well as metropolitan areas. The La Trobe Accelerator Program is specifically focused on increasing opportunities for entrepreneurs in regional areas, but also tapping into and building on areas of specialisation in different regions (e.g. agribusiness in Shepparton or Mildura in Victoria) by creating hot beds for research, innovation and learning.

Rating: 7

Improving access – enrolments, clusters, distance education and boarding

As noted in the Rural and Regional Education Review discussion paper, new technology has a potentially significant role to play in schools, training institutions and universities. This role is even

more acute for rural and regional students, who are able to use technology to overcome some of the inherent disadvantages of geographic isolation.

One of the best examples of using technology to address rural and regional advantage is in the Pilbara region of Western Australia. The region presents unique challenges, including a high proportion of schools in rural locations and some of the most remote in the world. The WA Government has made a commitment to ensure all young people in the state have access to a high-quality public school education. Its focus is not only on reducing the gap between metro and regional schools, but also on lifting performance broadly so all children can achieve their best. The Department has invested in a range of proactive initiatives to mitigate the effects of isolation for rural and regional students. This includes installation of new technology into 30 Pilbara schools to support delivery of 'live' video – augmented by investment in network optimisation technology to ensure schools can make the most of available bandwidth.

The learning technology landscape continues to change and it is likely immersive technologies such as augmented and virtual reality will take the notion of 'blended learning' several steps further. The use of AR and VR offer a range of benefits, particularly in the training sector.

The use of augmented and virtual reality is gaining pace in Singapore and the opportunity to embrace these new technologies in Australia is enormous.

Rating for enrolments: 7

Rating for clusters: 5

Rating for distance education: 7

Rating for boarding: 5

Diversity

It is critical that the diversity is promoted and facilitated in rural and regional areas.

Rating: 7

Transitioning beyond school

It is critical that viable pathways exist for students beyond school. Of particular importance is ensuring that students have access to a vibrant vocational education and training system that promotes digital economy skills and also provides opportunities for them to train for jobs of the future.

Rating: 6

Additional Comments

Cisco and Optus have separately provided a more detailed submission to the Commonwealth Government which highlights a number of case studies demonstrating the power and impact of digital in solving issues identified in the discussion paper.

It is encouraging that a holistic analysis and review is underway in relation to the issue of rural and regional education. The decision to review potential responses in all sectors of education simultaneously recognises that education, training and learning is increasingly integrated between sectors. It also recognises that in regional and rural areas, educational infrastructure is a shared community asset and increasingly becoming a more critical asset.

The Commonwealth Government has an important leadership role in supporting schools and systems to innovate and improve practice, and in assisting to accelerate the pace of change that occurs.

Cisco and Optus look forward to discussing its views further as part of the stakeholder consultation process and demonstrating that corporates are prepared to “step up” when it comes to contributing course content, curriculum, infrastructure and ideas to what is a critical challenge for our nation.