FutureNow Creative & Leisure Industries Training Council: Response to Education and Health Standing Committee inquiry into Digital Innovation in Secondary Education

FutureNow is the Western Australian Training Council for the Creative, Leisure and Technology Industries[i], working with industry, the education and training sector, government and the community to achieve the best possible education and skills outcomes. FutureNow also produces advice for employers, learners and government around current and emerging skills needs and future training requirements for the technology, creative and leisure industries.

Technological solutions have the potential to support students to learn in new, engaging and more rigorous ways. Immersive technologies such as augmented and virtual reality will allow students to experience hands-on learning that would not previously be possible.[ii] Artificial intelligence has the potential to provide personalised tutoring to students who may not previously have been able to access it.[iii] Automation may reduce the administrative demand on the time of teachers, enabling them to focus on other priorities in the classroom.[iv] However, possibly the most significant benefits that digital innovation can deliver to Western Australian students, is for our regional and particularly remote communities.[v]

Digital innovation supports access to education in regional communities

Regional stakeholders advise that better access to end-to-end training and education is a powerful tool to support youth retention, since many students currently leave their hometowns for further study, and often don't return. Better connectivity, as well as digital innovations such as virtual and augmented reality technologies, can support the delivery of a broader range of subjects and specialisms to people who would not otherwise be able to access these solutions because of distance from a campus, or specialist trainer.

Digital innovation supports employability in regional communities

In turn, studying locally is likely to lead to better youth retention if graduates are subsequently able to find work close to home, and this supports the overall population targets of the regions.[vi] It is predicted that digital innovations, particularly in the resources, community health, agriculture and telecommunications sectors, will require a technically savvy workforce on the ground in the regions in the future, and skilling students locally will support their employability in these sectors.

Digital innovation supports the sustainability of remote communities

FutureNow is currently working with regional and remote stakeholders to identify barriers to the delivery of existing qualifications in the area of Aboriginal and Torres Strait Islander Visual Arts to remote indigenous communities, and this project neatly highlights the benefits made possible by recent digital innovations.

Aboriginal Visual Arts is a substantial industry, and provides employment for many indigenous people living in very remote communities.[vii] Visual arts workers require cultural knowledge as well as technical skills to produce works, and a range of business and curatorial skills to mount exhibitions and sell their work. While there is demand for training solutions to support the development of these skills in remote communities, there are several barriers which may be addressed by the provision of technological solutions. These barriers include:

- A transient population, not always able to commit to attending classes at specific times. Online training could address this issue as it is available 'on demand'.

- A lack of suitably qualified and experienced teachers and lecturers in the regions, on call to deliver training when the demand arises. Solutions developed for online delivery do not rely on trainers being in the same place as students, so do not face this barrier.
- Class sizes which are too small to be fiscally manageable for the training provider. Online solutions can be delivered to a broad range of communities over any geographical distance, improving economies of scale.

While there is still a preference for face to face training solutions, particularly with regard to technical skills, immersive technologies have the potential to significantly improve the experience of the end user in this regard.

Connectivity and accessibility challenges

Significant improvements have been made in the provision of connectivity to regional hubs in the past five years, however there is still insufficient connectivity to support the reliable delivery of remote education solutions beyond the major hubs.

As described above, online and particularly immersive technologies, have the potential to significantly transform the opportunities available to the state's regional and remote communities, however good connectivity is the first barrier that needs to be soundly addressed in order to enable the delivery of such solutions.

There are other accessibility issues, especially for remote and disadvantaged communities, in accessing education and training through digital technologies, which will need to be addressed. While many of the solutions described exist already, affordability is a crucial barrier. The Department of Primary Industries and Regional Development has been working with the Tjuntjuntjara community, around 700km north-east of Kalgoorlie, in a trial which explores ways to deliver optimal connectivity while remaining affordable. The solution includes the use of Skymaster as well as a top-up satellite service and is tailored specifically to the needs of this community, taking account of affordability concerns. Stakeholders advise that solutions will need to be tailored in this way, at the community level.

Another significant barrier is the generally low level of digital literacy of students in remote communities. Where improvements can be made to the provision of accessible primary and secondary education solutions for these communities, and digital literacy improved, it will support the ongoing skills development of the people in them, and therefore their employability and their communities' sustainability.

Digital Innovation supports overall employability across WA

As well as an updated ICT curriculum, access to appropriate technology at school will support students in getting comfortable with technology and in pursuing post-secondary training and education in the ICT area, or in sectors heavily influenced by technological changes such as automation, artificial intelligence and the internet of things.

Digital Innovation supports upskilling and lifelong learning

There is worldwide recognition of the accelerating pace of change in technology, and the subsequent demand placed on workers to constantly upskill throughout their working life.[viii] [ix] [x] Digital solutions offer flexible, affordable, and accessible training to students and workers, including in regional and remote areas. For instance, FutureNow partnered with peak body CircuitWest to develop a bespoke online training package to address chronic skills shortages associated with the large, temporary workforce required to support regional touring performances.[xi]

As well as providing students with access to digital technologies, they will need to have rigorous skills in self-directed learning, including through the use of a range of technological solutions in order to participate in the workforce of the future. Learning how to optimally utilise online and other remote upskilling solutions and developing realistic expectations around lifelong learning at school will stand students in good stead for the world of work they will encounter after graduating.

Inquiry points for consideration

FutureNow's stakeholders have a broad focus, beyond secondary education, however the information provided above can be related back to the key focus areas of the inquiry as follows:

1. *How digital innovation can assist secondary students to learn anything, anywhere, anytime*: Online delivery methods allow for flexible access in terms of location as well as time, and allow for better economies of scale, making a broader range of education solutions accessible. Immersive technologies allow for a much broader range of educational experiences than previously possible, greatly improving the potential breadth of education solutions.

2. *The role of digital technology in addressing secondary student engagement and retention*: Immersive technologies and digitally-enabled gamification models of teaching create exciting, reward-centred environments which may support student engagement. Good connectivity will support access to a broader range of training and education solutions for WA's remote and regional students, supporting pathways to further education and employment and in this way supporting student options to remain in education for longer.

3. *How digital innovation can increase equity of opportunity in secondary education*: Connectivity and digitally-enabled education solutions, designed to meet the needs of at-risk groups including remote indigenous students, will support their access to education, the breadth of education solutions available to them, their capacity and employability, and the overall sustainability of surrounding communities.

4. *The potential for digital technology to cater to the needs of high performers and at-risk learners in secondary education*: Digital solutions offer a more cost-effective delivery model, and this in turn supports capacity to deliver tailored training and education. For instance, online experimental environments can be created to allow high performing students to continue their learning beyond what is delivered in the classroom, beyond the curriculum, or beyond the capacity of the teacher.

5. *Challenges to implementation, including provision of digital infrastructure, resources and technical support*: Challenges as described above include connectivity, cost and knowledge gaps including low digital literacy among some of the most at-risk students in WA.

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[i] Note that unless otherwise indicated, advice provided is based on consultation undertaken with FutureNow's stakeholders including in government, education and training, the public sector and private business. Links and references may provide additional information.
[ii] https://www.teachthought.com/technology/10-reasons-use-virtual-reality-classroom/
[iii] https://emerj.com/ai-sector-overviews/artificial-intelligence-tutor-current-possibilities-smart-virtual-learning/
[iv] https://www.itforedu.com/2019/06/3-ways-technology-can-reduce-teachers-workload/
[v] https://docs.education.gov.au/system/files/doc/other/01218_independent_review_accessible.pdf pp70-75
[vi] https://www.pdc.wa.gov.au/our-focus/strategicinitiatives/education
http://www.mwdc.wa.gov.au/f.ashx/Blueprint_Final_25_August_2015_Digital_and_Communications.pdf
[vii] https://www.australiacouncil.gov.au/aboriginal-and-torres-strait-islander-arts/
[viii] https://www2.deloitte.com/au/en/pages/building-lucky-country/articles/path-prosperity-future-work.html
[ix] https://www.mckinsey.com/featured-insights/future-of-work/what-is-the-future-of-work
[x] https://www.oecd.org/employment/future-of-work/
[xi] https://www.circuitwest.com.au/course/backstage-pass/