



**TAFE
DIRECTORS
AUSTRALIA**

SUBMISSION

Department of Education

REVIEW OF AUSTRALIA'S HIGHER EDUCATION SYSTEM

December 2022

About TAFE Directors Australia (TDA)

[TAFE Directors Australia \(TDA\)](#) is the national peak body that represents Australia's network of state and territory publicly owned Technical and Further Education (TAFE) institutes and dual sector universities. All Australian TAFE institutes and TAFE divisions of dual sector universities are [members of TDA](#). While the primary business of TDA members is vocational education and training, over half of TDA members also deliver higher education. This can be as part of a dual sector university, through third party arrangements, or their own qualifications. This means that some TDA members are regulated by TEQSA, ASQA, and if they are in Victoria, also by VRQA.

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1. Meeting Australia's knowledge and skills needs, now and in the future

TAFE Directors Australia (TDA) on behalf of its members, both those which offer higher education and those who do not (50:50), welcome the opportunity to contribute thinking and examples into this early stage of the *Review of Australia's higher education system*.

Australia's knowledge and skills needs for the future will require more people having access to higher education and higher levels of vocational education and training. Therefore, this review is fundamental for providing individuals with the education they need for life, strengthening communities, improving productivity, and positioning Australian industry globally.

Language is important in the context of this review. Vocational education and training (VET) is part of the tertiary education sector. It is TDA's position that the binary nature of Australia's VET and higher education systems must be removed if we are to meet Australia's knowledge and skills needs, now and in the future. Policy, regulation and funding all contribute to this separation. A focus on the student, in particular nurturing the student to attain higher education outcomes, will accrue benefits to individuals as well as to Australia.

In the TDA newsletter www.tda.edu.au on 28 November 2022, the CEO of TDA stated, "2023 bodes well for the creation of high-quality dual qualifications that are built for students. ... (The Review) should consider both new qualifications and financial support for a student who chooses TAFE for their higher education study."

Additionally, TDA supports the position of Tom Karmel, director of the Mackenzie Research Institute in *What about diplomas?* (Mackenzie Research Institute, September 2022). Karmel identifies the need to address the declining enrolments in VET diplomas. Karmel suggests a new type of tertiary education is needed to increase practice-based education. TAFE institutions, as educational entities, are well placed to fulfill this role. Karmel also states that students should be able to obtain bachelor degrees from a range of institutions, including ones that are predominantly VET focused. Again, TAFEs are such institutions.

Professor Glyn Davis, Secretary to the Department of Prime Minister and Cabinet, in his presentation to the TEQSA conference in November 2022 also called for a new type of institution. Davis suggests these institutions should preference teaching over research. TAFEs also meet this criterion.

Professor Greg Craven, past Vice Chancellor of the Australian Catholic University wrote in the *Weekend Australian* on November 12-13, there should be "strong incentives for universities to partner with TAFE for valuable, mutually advantageous dual credentials. This involves hard work, not flowery commitment". Innovative solutions are possible, but they are often not systematised or sustainable. For example, many dual credentials fall apart when the champion in either provider leaves. TDA suggests more is needed to move from exemplars to mainstreaming dual credentials.

In these introductory remarks, TDA suggests that the work on the AQF led by the late Professor Peter Noonan, which has not progressed, is important in addressing the value of VET compared to higher education. If the tertiary education sector is to be refreshed, equality of perception, and, to use Professor Peter Dawkins' term (Interim Director Jobs and Skills Australia), a more harmonised sector, is needed.

Currently, within the VET sector all 3,500+ Registered Training Organisations (RTOs) are treated the same. 29 only are TAFEs or dual sector universities with TAFE divisions. And yet, their size, ownership, purpose, complexity, business operations vary dramatically. TDA suggests that TAFEs as public providers, and as highlighted by Minister O'Connor, are not just the heart of the VET sector, but also critical parts of the tertiary education sector. As educational entities the potential for TAFEs' contribution in higher education has been untapped. Supportive policy is needed to maximise opportunities for students and to create a continuum for lifelong learning that is neither linear nor hierarchical.

TDA looks forward to being part of the discussion on how policy, funding and regulation can enable a future that maximises the Australian taxpayers' and individual students' investments in higher education to meet Australia's future requirements for knowledge and skills.

2. Access and opportunity

An understanding of the types of students who come to TAFE institutes versus universities and the diversity of the TAFE student population is important in terms of access and opportunity to higher education. An [Australian Research Council report on undergraduate degrees in vocational institutions](#) found that higher education offerings in TAFEs attract specific cohorts of students, especially those of mature age and from non-English speaking backgrounds. It also found that TAFE students enter bachelor degrees via diverse pathways, including previous study in VET and in higher education. The majority enter based on a portfolio of assessments and experiences, rather than an ATAR score and progression from year 12. Students' reasons for selecting higher education in TAFE Institutes stress the student experience and learning style, alongside identifying the relevance of the degree for their chosen field of employment.

TAFEs focus on those seeking to gain skills and qualifications either for their first job or for increased participation in the workforce through improved skills to achieve higher level jobs. Many TAFE students are 'second chance learners' (those who have not previously acquired qualifications) and require extensive support. TAFEs play an important role in supporting key cohorts such as First Nations, women, regional and migrant learners. In terms of the student population, the [2021 NCVER data](#) shows that TAFEs continue to have above average representation from students who identify as indigenous (6 per cent), who identify as having a disability (7.6 per cent) and who speak a language other than English at home (19.1%).

The [2021 NCVER data](#) also shows that women in particular use TAFE later in their career/life to gain a qualification. There is significant further scope for TAFEs to develop programs and initiatives that support female higher education access and completion in key industry sectors, particularly in those where women are under-represented as well as designing education models that address barriers to study for women.

In relation to the work of the National Centre for Student Equity in Higher Education (<https://www.ncsehe.edu.au/>) TDA believes there could be significant opportunities for mutually beneficial partnerships between TAFEs and universities in the pursuit of equity across both sectors.

TDA members operate in over [550 locations in Australia](#), including regional, rural, and remote locations and deliver to hundreds of thousands of students. The skills and training needs in one part of Australia may not be reflected in another region of Australia. TAFE is well positioned to provide this local place based learning and advice, consistent with the priorities of their State and Territory Governments.

Chisholm Institute, Victoria

VET experience supports student progression

Chisholm Institute reports that generally students who enter higher education programs from vocational education at Chisholm Institute come with strengths and weaknesses. Students who have completed a Diploma with Chisholm in a cognate discipline come with applied knowledge of the field, a strong theoretical understanding of the concepts taught, and are familiar and comfortable within the Institute. However, students also often lack the skill for self-directed learning including reading and writing skills, ability to research and find appropriate literature, associated software skills including using the office suite of programs, and there is often difficulty making the transition from competency-based assessments to those found in higher education programs. This requires resourcing and teacher understanding of how to build skills through formative feedback and deliver content through pedagogical approaches that bridge the gap between vocational education graduates and their second-year higher education peers. This finding at Chisholm is also supported more broadly in the sector by research on Advanced Standing from vocational education (Symmons, Kremer, & Rendell, *NCVER*, 2016).

TAFE Queensland

Opportunities for Aboriginal and Torres Strait Islander communities

TAFE Queensland offers the Remote Area Teacher Education Program (RATEP) which is a joint initiative between TAFE Queensland, James Cook University and the Queensland Department of Education, in liaison with Aboriginal and Torres Strait Islander communities. RATEP is a community-based primary education and early childhood education program that provides a direct pathway for Aboriginal and Torres Strait Islander people to become registered teachers, qualified teacher aides or early childhood educators. RATEP courses include the Certificate III in Aboriginal and Torres Strait Islander Education, Certificate III in Early Childhood Education and Care, Diploma of Aboriginal and Torres Strait Island Education and the Diploma of Early Childhood Education and Care. RATEP is an initiative which respects the culture and knowledge of Aboriginal and Torres Strait Islander people, values the contribution they can make to the education of all young Australians and delivers from a range of regional and remote locations across the state.

TAFE SA

Providing regional and remote access

TAFE SA's Aboriginal Access Centre (AAC) provides support for Aboriginal and Torres Strait Islander students and offers a variety of programs from regional and remote locations. An example of this partnership is with the Port Wakefield to Port Augusta Alliance (PW2PA) and Interact Australia. This partnership delivers a 16-week Certificate II in Civil Construction. Sixteen Aboriginal people took part in the training which was delivered on site at Port Wakefield and as a result, 14 are now employed by construction companies. TAFE SA is also working to enhance its regional presence in 2023, as well as increase accessibility of education and training opportunities across regional, rural, and remote South Australia through the establishment of eight Regional Skills Advisory Committees.

TAFE NSW

Regional and remote Connected Learning Centres

TAFE NSW continues to improve access for rural and regional learners through improved learning platforms and innovative facilities. In 2021, there were over 118,600 enrolments by learners living in regional or remote areas, comprising 28.8 % of total enrolments. TAFE NSW continues to expand regional and remote access to education and training by establishing Connected Learning Centres (CLCs) across regional NSW. These centres provide multi-purpose, digitally enabled learning spaces in accessible locations to provide regional areas with skills critical for the NSW economy.

Higher costs of delivery for equity students

Supporting students from disadvantaged backgrounds to attain higher and vocational education leads to better outcomes for those individuals and society more broadly. Barriers to engagement, participation and attainment persist and require various interventions and supports. Supports available to students are critical for their success, and include pathways programs, mentoring, additional numeracy, literacy and language support and financial support for cost prohibitive course requirements such as placements or block study. Students with cumulative disadvantage from the Northern Territory often face multiple barriers that require additional support. CDU uses the Equity Initiatives Framework to plan support for equity cohorts across the student lifecycle: pre-access, access, participation, and attainment/transition out. An example is the Intensive pathway programs that includes industry mentoring components. These have proven to be a successful entry to further study for First Nations students. Over the past 3 years CDU has implemented pathways programs in discipline areas of Business, Law, Health, Arts and STEM aimed at First Nations students. The programs require resources to plan and design a program that specifically addresses cultural needs and connects with industry and further VET/HE course opportunities. Given the geographical expanse of the NT and the unique needs of vulnerable equity cohorts, the higher costs associated with scaffolded and relevant support are genuine challenges faced by regionally located universities.

3. Investment and affordability

Expansion of Commonwealth Supported Places (CSPs)

TAFE Higher Education Providers attract a diverse range of learners including school leavers, students articulating from VET, young and mature aged workers, students from a wide range of equity groups, and students who are first in family to participate in higher education. Characteristics of higher education in TAFE that attract these students include the applied nature of higher education delivery, the close links with employers, supported pathways from VET to higher education, and small class sizes. By supporting those students who may not otherwise have attended university, TAFEs are enhancing the diversity of the tertiary education sector through the provision of new and innovative pathways into higher education. The delivery of higher education by TAFE directly contributes to the achievement of Commonwealth targets for social inclusion in higher education.

However, most TAFE higher education students are ineligible for Commonwealth Supported Place (CSP) funding. This inequitable exclusion means they have no option but to pay full fees even although a significant portion of students come from low socio-economic and other disadvantaged backgrounds. This contrasts to universities, where the CSP funding scheme substantially subsidises students to study 'HECS' courses in undergraduate qualifications.

Commonwealth funding is required to support the increasingly important role TAFE plays in broadening student choice and access, strengthening the capacity and reach of the system, particularly in regional areas, and addressing critical shortages of higher skills in the Australian economy.

CSPs should be made available for any student who wishes to begin their higher education in a supportive TAFE environment. The policy that restricts access for these students to government subsidised places continues to be fundamentally unfair.

FEE-HELP Loan Fees

TAFE higher education students are also charged fees (20%) on student loans under the FEE-HELP scheme. These fees are not applicable to university students. This creates an immediate inequity and unfairly penalises higher education students enrolled with non-university providers. The Higher Education Loan Program should not draw artificial lines between public universities and public Institutes of Higher Education or create perverse incentives to enrol in one or the other. The perception of the loan can lead students to move away from TAFE to university.

Micro-credentials

Similarly, funding for micro-credentials needs to be equitable for both the VET and higher education sectors. Micro-credentials are a new and burgeoning area in higher education. TAFEs have been delivering stackable micro-credentials for years in the forms of units of competency and skill sets. There are notable offshore opportunities for providers to deliver micro-credentials to build combined VET skills and higher education knowledge for future study and work in Australia.

TAFE NSW

Addressing Emerging Industry Skills Needs through Micro-credentials

The ways industries operate, and the skills required for the future are rapidly evolving. This is driven by accelerated digitalisation in workplaces, adoption of innovative technologies, changing economic landscapes and shifting social behaviours and consumer expectations. TAFE NSW regularly adapts its course profile and delivery approaches to anticipate and respond to these changes. To ensure future industry demand is met, TAFE NSW is building the supply of new workers trained in emerging areas and the latest technologies, enabling worker mobility through reskilling in future-proofed and in-demand areas and upskilling existing staff in emerging skills. For example, in partnership with industry, TAFE NSW launched its Micro Skills training solution to address emerging needs including Zero Emission Electric Vehicles in 2021, construction and cyber security. The development of the Electric Vehicles micro skills was funded by the NSW Government and Industry and the NSW Government funded enrolments. Construction and Cyber security development are jointly funded by TAFE NSW and Industry.

Holmesglen Institute, Victoria

Access to CSPs makes a difference

In 2005, Holmesglen Institute became one of the first TAFE institutes to offer and confer higher education awards, building on nearly two decades of partner-provider relationships with higher education institutions, including a range of Australian universities in delivery of degree and sub-degree pathway programs. Their strategy for developing and delivering their own higher education programs was focussed on improving access to bachelor degree study, particularly for under-represented cohorts within their communities. Analysis of equity indicators at Holmesglen Institute in Victoria demonstrates Holmesglen's success in expanding participation by under-represented groups in the Bachelor of Nursing. Stand out results have been achieved for first in family participation. Over the 2018 to 2022 period, 60% of commencing local students in the Bachelor of Nursing program are the first in their family to study higher education (based on neither parent having attained a qualification at bachelor's level or above, excluding not stated or known data). VET pathways have also been shown to positively influence this participation. Over the same period, 44% of their commencing learners have entered with advanced standing from a VET pathway. The trend in both measures is increasing. Based on Holmesglen's achievements in expanding opportunities for under-represented groups, they were awarded a short-term boost in Commonwealth Grant Scheme places for the Bachelor of Nursing. Making Commonwealth Supported Places universally accessible to public providers of higher education programs would significantly address the inequities in higher education participation.

TAFE SA

Micro-credentials and industry partnerships

TAFE SA is collaborating with high value, high growth and emerging industries to research and develop programs to meet new skills needs to ensure industry demands can be met when they are needed. As part of this work, TAFE SA launched a suite of micro-credentials in 2022. An example of this work is a micro-credential in Hydrogen Fundamentals which offers students' knowledge of the Australian hydrogen energy sector. Other examples are:

- Boosting Revenue in Tourism
- Cyber Security for Small Business
- Drones in Agriculture
- Introduction to Naval Shipbuilding..

4. Governance, accountability and community

TDA member institutes delivering both vocational education and training as well as higher education are regulated by both TEQSA and ASQA. For large providers, such as TAFE NSW, these regulatory standards, while similar, require a significant investment in administration for those delivering both VET and higher education courses. The re-registration audits conducted by both agencies audit similar and overlapping business functions, for example: marketing of courses, financial management, access to and use of facilities, and issuing qualifications. ASQA and TEQSA have different processes in place for the registration/adding to scope of courses which incurs additional costs for TAFE providers. Furthermore, the introduction of TEQSA full cost recovery and associated evidentiary requirements is far more onerous than for self-accrediting organisations.

ASQA regulates in a different way to TEQSA with the later focusing on quality and the former on compliance. While ASQA's self-assurance process is an improvement, the two regulators operate within unique contexts driven primarily by the number of providers to be regulated, and for VET, the national training packages. New thinking and a different approach to tertiary regulation is required.

Bradley recommended one regulator. That may be the solution, if it delivers considerable reduction in red tape and a system that is less binary between VET and higher education. Regulators changing their processes according to risk and provider type may also be a solution. Future governance and regulatory arrangements need to address any imbalances between the sectors and between different providers.

TAFEs operating in both environments need a streamlined set of regulatory requirements, a single re-registration process and a determination of low-risk provider status, to drive efficiencies and reduce costs. This would deliver dual sector universities and TAFEs with higher education simpler regulatory processes.

TDA is supportive of the establishment of Jobs and Skills Australia (JSA) and is pleased that higher education is now included in its remit. To avoid fragmentation, JSA should have a wide remit. For example, TDA sees no reason for a tertiary education commission. Such a body may further complicate the complex governance and regulation environment that exists.

Additionally, TAFEs are well connected with the newly formed Jobs and Skills Councils (JSCs) and TDA will be supporting the JSCs to engage with TAFE. These industry linkages are important in terms of future partnerships in higher education.

An individual TAFE's breadth and scope of delivery is reflected in TAFE-industry-employer-community engagement in our cities and suburbs, and in regional and remote Australia. As public providers, TAFEs play an important role in contributing to sovereign capability, security and supporting local communities. TAFE connections with local employers provide significant opportunities for deeper industry partnerships thus impacting future skills and knowledge.

TAFE NSW

Community focus

TAFE NSW Redfern campus delivered a successful IPROWD (Indigenous Police Recruitment Our Way Delivery) program. In 2021-22, 22 participants completed the program, with many either gaining employment or going onto further study. Three participants joined the Policy Academy and seven participants followed on with meaningful employment, including as Probationary Constables, others going into Disability Care, the Australian Federal Police, Department of Defence and NSW Transport while others went into further study at university or other programs.

5. The connection between the vocational education and training and higher education systems

There are currently nine TAFE Institutes delivering higher education in Australia, which sit alongside the TAFE divisions of the six dual sector universities that are also members of TDA. These educational institutions have a lot of insight on navigating the cultural differences between the VET and higher education systems.

While most TAFEs partner with universities there are considerable barriers to the success of these partnerships. The most important of these barriers is the nature of the training products TAFE are funded to use. Their constant changes put at risk the development of joint qualifications. Competency based training at the Diploma level is also questionably not the best approach for fostering pathways as per the recent NCVER report *Adding value to competency-based training* (NCVER, December 2022). An example is provided of the experience of Edith Cowan University and North Metropolitan TAFE, Western Australia below.

The proposed merger of the Australian Qualifications Framework (AQF) (<https://www.aqf.edu.au/>) across vocational education and higher education was meant to encourage lifelong learning. The operationalisation of this framework has been debated within sector wide committees without clear and consistent foci or outcomes defined within the TAFE or higher education sector. The [AQF review](#) was published in 2019, and, as would be expected, identified that all students that obtain future qualifications would need to show skills in digital literacy, be able to react to industry demands, understand diverse cultural requirements, and transform as workplace demands change. A very recent, but pertinent push from the Australian Government has been the recognition of "Pathway Options", where students can study in one of many educational styles, while ultimately progressing to degree level qualification, job outcomes, and appropriate remuneration.

The student view of pathways from vocational education to higher education is blurry, ambiguous, and the message from educational providers has been weak. The number of students entering higher education from any entry point has increased from 8% in 1994, to over 50% in 2021, despite many students not meeting the requirements to enter higher education from High School education

Despite the recent push from Government to highlight pathways from vocation to higher education, very few people outside educational institutes understand what a pathway model means and what is required for supporting transitioning vocational education students. A diploma constituting the first year of a degree program through recognition of workload and academic skills has not been systemised.

Another aspect of successful pathways are many students who can start in one provider with VET stay with that provider for higher education. For example, 30 per cent of RMIT enrolled diploma students go onto a RMIT associate degree and then a bachelor degree. Another example is at Melbourne Polytechnic which reports that many students who do not meet the university entry requirements for the Bachelor of Education and who start in the Diploma successfully transition to the Melbourne Polytechnic Bachelor of Education. This includes many under-represented cohorts.

Current challenges for the VET student include:

- There are no systemic arrangements in place for credit for the first year of a degree for students with an AQF Level 5 Diploma. Credit transfers are not easily developed with universities, resulting in inadequate transfer information being available for the student pathway at time of enrolment
- Lack of a formal collaboration of teaching teams across institutions to support the transition between the different styles of delivery and assessment inherent in different qualifications
- While pathway options may be available, they may not be well known or utilised extensively.

The concept of lifelong learning means that pathways are not always linear. There are significant numbers of higher education graduates who take up a practical skills-based qualification post attaining their degree. To enhance this model, innovation is needed so that students can select from both sectors simultaneously. Currently, funding, policy and regulation do not make this easy. The discussion on connecting the VET and higher education sectors needs to go beyond pathways and look at the creation of both new qualifications. Incentives for universities to partner with TAFEs on dual credentials should be encouraged.

Self-accreditation for TAFEs (like universities which create their own curriculum) would go a long way in providing better responsiveness to Australian future skills and knowledge needs. TAFEs as public institutions could work with universities, industry and unions directly to create contemporary course content and design and produce job ready graduates at scale. A strong and autonomous TAFE sector can help meet Australia's short-term skills shortages, boost productivity of the workforce and better prepare Australians for the jobs of the future.

For Australia's current and future workforce needs, the AQF level 5 (Diploma) warrants particular attention as this is the intersection point between vocational education and training (VET) and higher education. According to [2021 NCVER data](#), enrolments in Diploma level qualifications have declined in recent years.

However, five year projections noted by the [National Skills Commission](#) show more than nine-in-ten new jobs are projected to require post-school qualifications and that occupations in high demand are more likely to be specialised and require higher level skills and formal qualifications. At the nexus of VET and higher education, the AQF level 5 is an extremely important part of the tertiary education sector and needs to be a focus in this review.

While the diploma is an important qualification as a pathway through VET to higher education, the value of the diploma for new and emerging job roles (e.g. renewable energy) should not be underestimated. A range of studies have been completed looking at the employment needs of Australia's growing renewable energy industry, and all have found there will be a significant increase in renewable energy related jobs in the short to medium term. The University of Technology Sydney (UTS) estimates that the growth in renewable energy in Australia alone will require 20,000 new jobs over the next 5 years, with 75% of these jobs being distributed across regional and rural Australia (Briggs 2020).

Importantly, whilst many of these new positions may have an underlying trade or professional qualification, they will require unique knowledge and training specific to the renewable energy industry. Today, the Clean Energy Council found there are shortages of people with relevant skills and backgrounds in electrical technology, wind turbine maintenance, solar installation and construction management. These priority industry needs should be considered within this review.

Australia's tertiary education system requires future pathways that incorporate the applied and theoretical nature of complex higher level capabilities integrating VET and HE subjects to form courses.

TAFE NSW

Educating for the clean economy

TAFE NSW Higher Education currently has a Diploma in Renewable Energy and an Undergraduate Certificate (UGC) in Renewable Energy Engineering (a Higher Education Short Course). The UGC was offered as a fee free course in Semester 2 of 2022. In Australia, renewable energy currently makes up approximately 23% of our electricity generation, and this is expected to increase to over 50% in the next 10-15 years. This will require the design, installation, and maintenance of hundreds more wind and solar farms, thousands of wind turbines and millions of solar panels. Additionally, large amounts of supporting infrastructure, from hydro and battery storage systems to weather monitoring and electricity transmission facilities, will be needed. With the continuing demand for appropriately skilled and experienced employees is clear, the proposed TAFE NSW Higher Education Diploma of Renewable Energy Engineering is a way for an individual with an existing relevant trade or professional qualification to move over to the renewable energy industry, building on their underlying professional experience with renewable-energy unique skills or knowledge or to enter the industry.

Melbourne Polytechnic, Victoria

Good academic governance is essential for pathways

Melbourne Polytechnic strategically supports pathways and qualifications that are relevant for Australia, by directing these to meet industry requirements. Their qualification governance has embedded mechanisms to ensure the dynamic updating of qualifications, so they continue to remain relevant as industry requirements change. Melbourne Polytechnic learners are typically from non-represented cohorts that have diverse learning requirements. These are very different from the student cohorts that pathway straight from school. Melbourne Polytechnic has developed a wide range of supports for this cohort to ensure their success, including low teacher to student ratios. Melbourne Polytechnic successfully pathways students from the Diploma to the Bachelor degree.

North Metropolitan TAFE, Western Australia

Barrier to successful partnerships

The Cyber Security pathway partnership between North Metropolitan TAFE and Edith Cowan University (ECU) shows students that there is a strong connection between VET and higher education. A student can complete a Cert IV in Cyber Security and an Advanced Diploma of Cyber Security with North Metropolitan TAFE in two years. Their VET qualifications will then give them eighteen months of recognition of prior learning with Edith Cowan University, allowing them to gain a Bachelor of Science (Cyber Security) in eighteen months, rather than three years. This North Metropolitan TAFE and ECU pathway program works well for the student as it allows them to complete three qualifications in three and a half years, rather than five years. Additionally, students can study full time (with flexible study options through both institutions) and work part time with cyber security industry partners, that work with both organisations. The collaboration between North Metropolitan TAFE and ECU allows students to gain valuable experience throughout their studies and leads them to employment opportunities with leading cyber organisations when they graduate. However, frequent changes to VET courses can be disruptive to higher education, making them reluctant to engage in pathway programs as it requires additional time and effort to map out the new courses and complete the recognition of prior learning process. This lack of cohesion is detrimental to students who expect the program to stay constant for the duration of their studies.

TAFE Queensland

From school to TAFE to a degree

Starting with TAFE at School and powering all the way through to a fashion degree, TAFE Queensland students are 'doing uni differently'. One of TAFE Queensland's students was torn between a love of the arts and aspirations to design theme park rides as a mechanical engineer. It was a disinterest in maths that led the student to enrol in a TAFE at School fashion course in Years 11 and 12. Seeing a connection between fashion and engineering, the student completed a Certificate II and III in fashion before enrolling in a Diploma of Fashion after graduating high school. After completing the diploma, the student enrolled in a Bachelor of Applied Fashion offered by TAFE Queensland in partnership with the University of Canberra.

6. Quality and sustainability

TAFEs like universities have been challenged during the last three years. For example, TAFE international students faced several challenges during COVID-19. These included accessing financial support to meet their overall cost of living. This was due to the fact they were not included in federal government financial support and were unable to work during lockdown periods. Some students struggled to transition from face-to-face to virtual classroom learning and many reported struggling mentally during this time.

All TAFEs implemented a number of measures to support international learners during COVID-19. For example, emergency food assistance through charity groups and tuition fee instalment plans to ensure support for continuation of study when employment opportunities were lost. In terms of offshore enrolled students, TAFEs focused on digitally, enabled learning under the COVID-19 flexible delivery arrangement. International students impacted by COVID-19 travel restrictions were case managed to ensure retention and a smooth transition to onshore study.

TAFEs play a critical role in promoting equity and access to education. For example, as public VET providers, most TAFEs have an obligation to their State and Territory governments to serve the people and communities of that jurisdiction, including those who face significant barriers to education and employment. As per previous sections, TAFEs provide additional support to Aboriginal and Torres Strait Islander learners, learners with disability and other learners experiencing disadvantage.

Overall enrolments and completions were impacted in 2021 by the closure of campuses and reduced face to face training caused by the pandemic. For example, TAFE NSW delivery in Correctional Centres was severely disrupted due to COVID-19 health regulations which restricted entry into centres. Some students' completions were delayed due to a reduction in available student work placements particularly in Health, Aged Care and Childcare settings.

7. Delivering new knowledge, innovation and capability

TDA members undertake practice-based innovation and applied research as part of industry collaboration between researchers, industry, and government. This activity can be theoretical research, which leverages intellectual property for downstream commercialisation. It can also be the acquisition and assimilation of knowledge, and transformation and exploitation of knowledge as TAFEs across Australia engage with local industry and employers, and communities.

TAFEs know how to work with businesses of all sizes and at all stages of their development. Applying that sound understanding to collaborative applied research problem solving and idea development is an essential TAFE pathway for successful applied research for industries, firms, SMEs and family businesses, and for TAFE students. Many TAFE educators and trainers already demonstrate practice-based innovation and applied research in their own teaching practice for and with industry and community partners.

The Canadian applied research model must be considered in this context. It is funded by government and fosters place based, small scale local tertiary education partnerships with industry or community.

To date, Australia has failed to tap the potential of TAFE and TAFE-industry-university partnerships in developing new knowledge, innovation and capability.

Holmesglen Institute, Victoria

Leading in applied research

Established in 2016, the Holmesglen Centre for Applied Research and Innovation acts as an important driver of our relationships with industry and the community. It provides a supportive environment for Holmesglen researchers and is an important complement to our teaching and learning programs.

Holmesglen has led the way in developing research opportunities through its partnerships with industry, in particular health industries related research and research collaborations with the building construction industry and VR (virtual reality) related research and innovation. Examples of Holmesglen research projects include:

- **Building 4.0 CRC** - Along with 29 other organisations across the commercial, university, industry and government sectors, Holmesglen is collaborating in research projects aimed at changing the building industry through research and innovative technologies. For Holmesglen, research outcomes are focussing on the development of training programs in the use of new technologies (including digital technologies and robotics); innovations to work processes; and policy and regulations improvement. The CRC will also utilise our extensive workshop facilities and trained technical staff to support trials of improvements to the key building phases.

- **Hospital falls** - Holmesglen was selected to work with national and internationally acclaimed researchers to secure a prestigious National Health & Medical Research Council Grant to investigate falls in Australian Hospitals. Our research has benefited health professionals locally and internationally by educating them on falls prevention. We made a case for disinvestment from falls risk scoring tools in hospital settings by establishing this does not reduce falls and takes valuable time. Our Falls Virtual Community of Practice has improved the capability and capacity of health care workers in Australia and our work has contributed to the newly published World Falls Prevention Guidelines.
- **Jasper^{VR}** - Over a two-year period, an innovative virtual reality (VR) program was produced, implemented and trialled with nursing students at Holmesglen. The aim was to create and investigate authentic VR scenarios and a bespoke software application. Each was compared to traditional simulated learning in a randomised controlled trial. Outcomes of this study revealed significantly positive outcomes on the capacity of the VR experience to impact positively on student learning and to prepare them for future work.

These projects demonstrate Holmesglen's capacity and capability to make significant contributions to solving real-world industry problems, assisting in the commercialisation of industry products and processes, and improving learner outcomes and work readiness. However, Holmesglen's ability to extend the impact is often limited by the availability of funding or ineligibility to apply for existing grant schemes as a non-university higher education provider.

TAFE NSW

Institutes of Applied Technology

The Institutes of Applied Technology (IATs) at Meadowbank and Kingswood will deliver a new model of education, where TAFE NSW is not only partnering with industry, but also with universities to provide a fully integrated and unique learning and training environment for students. The IATs will allow for transition between TAFE NSW and university, offering a full range of qualification levels. The proposed educational offerings for IAT Digital Tech and IAT Construction are:

- **Micro-credentials:** Stackable micro-credentials are a key feature of the Gonski-Shergold review (NSW) and has been identified through industry consultation as a critical educational offering that will address the limitations of rigid training packages.
- **Traineeships and Apprenticeships:** including the exploration of a three-way partnership between industry, high school and further education (both VET and Higher Education).

- Further Education: Networking events, masterclasses and credentialing programs (e.g., Industry certification programs).

TAFE NSW have established partnerships for both IATs with UTS, Macquarie University and Microsoft for the IAT in Digital Tech; and Western Sydney University and CPB Contractors for the IAT in Construction.

As part of embedding scholarship into learning and teaching, TAFE NSW Higher Education students engage with industry on applied research projects where possible, which have real world application.

The following applied research projects were completed in Semester 1 of 2022 by students enrolled in the Bachelor of Information Technology (Cyber & Network Security). Some projects have a real-world application in which students engaged with industry with the potential for commercial application.

- **TrollGuard** is designed as a web-based asset monitoring and management system for physical retailers to keep track of their shopping trolleys with the aim of reducing the number of abandoned trolleys which cause environmental issues and cost retailers millions each year to recover or replace. The system sends an email notification to the nominated authority or person if a trolley is not in its designated area. The project is based on front-end and back-end web servers and also AWS Web Services technology.
- **ANDCaT** is designed for automation of switch configuration with the aim of automating a skilled yet menial task done by network engineers. The system gathers key information about switches, their port configurations and the endpoints plugged into them. This task when carried out manually can take valuable time away from more creative work by network engineers such as design and implementation. In preparing for any major network deployment, having all relevant information taken as a point in time snapshot can aid in troubleshooting or assist in rollback if issues arise during implementation. In general operation the system provides end users with access to the relevant configuration information which helps to streamline the support process.

The following applied research projects were completed in Semester 1 of 2022 by students enrolled in the Associate Degree of Applied Engineering (Renewable Energy Technologies)

- Sydney Trains Elevated Solar Cycleway Feasibility Study and Proposal where students enrolled in the Associate Degree of Applied Engineering (Renewable Energy Engineering) engaged with Transport for NSW on a concept overview and technical /environmental /financial /social analysis.
- Identification and Ranking of Wind Energy Opportunities for Small Wind Turbines for Diffuse Energy where students enrolled in the Associate Degree of Applied Engineering (Renewable Energy Technologies) identified potential locations for wind turbines.