

2024 Premier’s Vocational Education in Schools Scholarship

Cutting-edge work placements and technologies

Inspiring the future of Vocational Education and Training (VET)

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# Introduction

In today's rapidly evolving technological landscape, it's challenging for vocational education teachers and curricula to keep pace with the latest advancements. However, students in NSW enrolled in Vocational Education and Training (VET) programs can stay ahead of the curve by undertaking work placements. These placements bridge the gap between classroom learning and real-world applications, providing students with hands-on experience and invaluable insight into the latest industry trends, technologies, and practices.

Through work placements, students apply theoretical knowledge in real-world settings, developing essential job skills such as technical abilities, problem-solving, and interpersonal skills. They gain a deeper understanding of industry practices, work culture, and professional expectations, preparing them for the realities of their chosen field. By demonstrating their abilities in a real work environment, students enhance their employability and are better equipped to meet industry standards. Moreover, work placements provide students with industry-specific knowledge and employability skills crucial for their future career paths, ensuring they remain adaptable and competitive in an ever-changing technological landscape.

By infusing vocational education with a tangible sense of real-world relevance and fostering a culture of lifelong learning, the overarching aspiration is to catalyse a transformative paradigm shift in teaching practices. The ultimate goal is to empower students to be at the forefront of their chosen vocational paths, equipping them with the essential skills and competencies to successfully navigate and excel in the constantly changing landscape of the job market. Furthermore, this approach enables students to develop a strong professional network and build meaningful connections with industry professionals, paving the way for future career opportunities. Additionally, employers benefit from accessing a skilled and job-ready workforce, ensuring a competitive edge in their respective industries.

# Focus of Study

This study tour aims to explore advancements in computing technologies and assess the impact of work placement in vocational education. It investigates the integration of technology within vocational training, analysing how these innovations reshape learning environments to be more engaging and effective in preparing students for the evolving job market. The overarching goal is to understand how to utilise these innovations to equip students with the requisite skills and knowledge.

The study tour scrutinises the benefits of work placement, emphasising its role in providing students with hands-on experience, bridging academic theory with practical application, and enhancing job readiness skills. Visits to cutting-edge businesses and organisations offer insights into successful work placement integration, including methodologies, challenges, and achievements. Ultimately, the aim is to foster mutually beneficial relationships between educational institutions and the commercial sector, with the objective of enriching students, educators, and the broader business community.

# Significant Learning

### Northern Territory & Western Australia

The challenges faced by Indigenous students in Australia are complex and influenced by various factors, including location, school type, and individual circumstances.

The schools I visited in Darwin, Humpty Doo, Broome, and Perth (Distance Education) have made significant strides in supporting their Aboriginal students, who comprise a substantial portion of their student population. To address the unique challenges faced by these students, including language barriers, socioeconomic disadvantage, and cultural differences, the schools have implemented a range of programs and resources. This comprehensive and ongoing support involves multiple agencies and programs tailored to the individual needs of students and their families.

The support programs and resources offered by these schools are vital in helping Aboriginal students overcome obstacles and achieve their full potential. These agencies offer support services to help students overcome obstacles that hinder their ability to complete work placements, addressing challenges such as transportation difficulties, family responsibilities, financial constraints, and unfamiliarity with workplace expectations. The Stars Academy provides Aboriginal Education Coordinators and individual support for VET students at the schools visited, where they work individually with each of the students and their families. Assistance is provided from multiple agencies that provide support services, including funding, mentorship, training, and resources, to help students succeed in their VET studies and transition into the workforce.

The schools visited in the Northern Territory and Western Australia have successfully implemented VET pathways, with almost all students completing their VET studies and most transitioning into work within the same field. VET courses are introduced in Year 9, and by Year 11, students opt for either a VET or academic pathway. Specialist trainers with industry expertise deliver VET courses, rather than qualified teachers as occurs in NSW. These trainers only teach VET classes, often across multiple schools.

VET courses offer work placements ranging from one to six weeks per year, with comprehensive training and guidance provided to help students select suitable placements. This process involves collaborative consultations with parents to discuss career pathways and potential challenges. Teachers deliver extensive work readiness training to students before placements, empowering them to approach their work experience with confidence. The school's VET support staff play a crucial role in coordinating support from external agencies and targeting specific students through specialised programs, ensuring they are well-prepared for the workforce. Each school has a dedicated team of support staff who manage VET programs, work placements, and external assistance, providing a cohesive and supportive framework for students to succeed.

The School of Isolated and Distance Education (SIDE) in Perth, Western Australia delivers VET programs to remote and isolated areas, catering to 88 schools and 559 VET students. VET courses are delivered through a blended approach, combining online learning with regular school visits from trainers. With small class sizes ranging from 5 to 15 students, teachers can tailor instruction to meet individual needs. SIDE offers a Certificate I in VET for Year 9 students, providing an introduction to VET and re-engaging students who may be disenchanted with traditional schooling. This approach has led to improved outcomes and multiple qualifications upon graduation. Instead of traditional work placements, SIDE provides simulated work experiences, preparing students for the workforce in a practical and effective manner.

### Singapore

ITE Singapore and Polytechnic Singapore are pioneering institutions in technical education, offering cutting-edge courses in electronics, information-communication technology, engineering, applied AI, cybersecurity, and IT. The students enrolled in these Singaporean institutions are predominantly 17 and 18 years old, which is equivalent to the age range of Year 11 and 12 students in New South Wales (NSW), Australia. Their strong industry partnerships and emphasis on work placement and technology prepare students for the workforce. Industry partners work with these institutions in developing all new courses and in maintaining existing courses.

ITE Singapore's courses include internships which run from 6-9 months in the final year with teacher guidance and support arranged by the institution and usually lead to pathways to work. The School of Electronics and Info-Comm Technology offers specialised courses in cyber security, AI, and IT systems, with hands-on training at facilities like eSpace and the Advanced Security Technology Centre. Businesses work closely with the institutions in providing real-world projects for students to develop within each course. During the courses students participate in competitions, fostering innovation and excellence. Both institutions excel in providing industry-relevant skills and knowledge, making them models for effective work placement and technology integration in education.

I visited an AI class and was presented with a showcase of drones, robots, light and sound welcoming me and introducing me to the world of robotics. This presentation was prepared by these first-year students, demonstrating outstanding skills and teamwork.

The Australian International School caters to students ranging from toddlers to Year 12, providing a comprehensive educational program. The school boasts extensive resources dedicated to VET, with ongoing considerations for expanding these resources further. VET classes typically accommodate six students, although class sizes can be significantly smaller, and vocational education courses are primarily delivered by specialised trainers.

The school offers Hospitality and Construction options for students in Years 9 and 10, as well as Years 11 and 12. The VET classes are run by trainers from industry backgrounds, as is the practice followed in Western Australia. However, facilitating work placement opportunities for students within Singapore poses challenges due to safeguarding and regulatory considerations. To address this, students undertake work placement at SeaWorld in Australia or Lendlease in Singapore, under trainer supervision. The trainer conducts visits to the work placements conducted in Singapore, however, due to the location visits are not made in Australia. Trainers arrange for parents to make contact with the employer during work placement visits to Seaworld Australia. If a work placement at Seaworld Australia is not feasible, the teacher collaborates with parents to identify and secure an alternative suitable work placement in Australia, ensuring the student's vocational training and development remain on track. This approach ensures students receive hands-on training while maintaining safety and regulatory standards.

These school visits provided valuable insights into the VET systems in Singapore and highlighted potential collaborations and best practices. ITE Singapore, Polytechnic Singapore, and the Australian International School demonstrate a strong commitment to providing students with industry-relevant skills and knowledge. Their approaches to experiential learning, strong industry partnerships, and vocational education provide a model for effective VET programs.

### USA

Beverly Hills High School in California accommodates a student population of 1,200 students aged between 14 and 18, spanning Years 9 through 12. During my visit, I had the privilege of meeting with the Coordinator of Career Education, who has played a pivotal role in securing multiple grant funds to enhance the school's facilities over recent years. These funds have been utilised to establish state-of-the-art facilities for each of the frameworks and provide students with leadership opportunities, including participation in competitions and networking initiatives to cultivate business partnerships for immersive experiences.

The school currently offers several Career Technical Education (CTE) pathways, including Arts Media Engineering (Audio production/Broadcast/Theater Tech), Business, Engineering (Robotics), Fashion, Health Sciences (Biotechnology), and Hospitality (Culinary). These courses are delivered by trainers and guest presenters in relevant areas. Students are actively encouraged to participate in external competitions relevant to their chosen subjects, receiving guidance and support from their teachers throughout the process. Notably, the school achieved outstanding success in the "Skills USA" competition, securing first place in the Baking category during the Atlanta competition.

To support the implementation of CTE programs, the school has secured external grants, which have been instrumental in acquiring resources such as a new recording studio and fashion labs. Additionally, the school benefits from strong community support, enabling students to gain valuable industry experience through internships with local businesses. As part of the CTE curriculum, students undertake internships with local businesses and participate in monthly small-group tours of local enterprises and work placement hosts. This initiative, although recently introduced, has already proven successful in enhancing students' skill sets and facilitating their transition into the workforce.

Advanced Technologies Academy in Las Vegas is a public high school classified as a magnet school, catering to a student population of 1200 aged 14 to 18 years. A magnet high school, as its name suggests, focuses on specific subjects or themes, such as science, technology, engineering, arts, or mathematics (STEAM), to attract students with a keen interest in these areas.

The school has garnered numerous awards in recent years for achievements in external academic competitions, including robotics, coding, cybersecurity, and business. Classrooms are well-equipped with technology resources, and each student is provided with a Chromebook funded by the District office. The school supports students to gain external accreditation in technology qualifications while studying at school. The school also offers vocational courses, requiring students to complete 60 hours of workplace placement annually, with no teacher visits to these workplaces necessary. While these work placements can pave the way for students to transition into employment, the majority of students at this school are academically inclined and aspire to pursue higher education at university, leveraging their vocational training as a stepping stone to further academic and professional success. Furthermore, the school collaborates closely with the community to deliver programs and identify workplace trends. Community organisations have contributed to project-based learning (PBL) courses by aiding in both delivery and evaluation. Local businesses have also assisted in upskilling technology teachers in new initiatives within engineering and technology.

The schools visited in the USA demonstrated a remarkable commitment to fostering strong partnerships with local businesses, leading to a synergistic exchange of experiences and resources. By regularly collaborating through initiatives such as monthly tours, guest presentations, and joint competitions, these schools and businesses have created a mutually beneficial ecosystem that enhances the educational experience and prepares students for the workforce.

This close collaboration has yielded a significant increase in available work placements for students, providing them with invaluable hands-on experience and exposure to real-world applications of their skills. By working together, schools and businesses have created a talent pipeline that addresses the needs of the local industry, ensuring that students are well-prepared to succeed in their chosen careers.

This model of partnership and collaboration serves as a best practice for education institutions and businesses alike, demonstrating the potential for meaningful collaboration to drive student success and economic growth.

### Technology visits

During my visit to the USA, I toured the headquarters of Facebook, Google, and Apple Park, each boasting a distinctive campus-like setting with multiple buildings. I observed similar working conditions across the three companies, with employees splitting their time between remote work and on-site collaboration with their teams. The staff I spoke with consistently expressed their appreciation for the flexible work arrangements, benefits, and perks, including meals, snacks, entertainment, and transportation, that come with working for these industry giants. Interestingly, some staff members secured their positions after completing internships with the companies, while others brought their expertise from previous experiences elsewhere. Proficiency in coding is an essential requirement for these roles, although no specific coding language is strictly mandated by these organisations. Instead, they expect their staff to be versatile and able to adapt their coding skills across various programming languages. Additionally, strong communication and teamwork skills are highly valued, as these professionals need to collaborate effectively to achieve shared goals.

A visit to the Sphere in Las Vegas comprises two distinct experiences. Initially, visitors engage in an interactive session lasting an hour, featuring a variety of technological displays, including holographic art installations. Interactive robots resembling humans utilise artificial intelligence to engage with visitors. These robots mimic human movements, gestures and speech. Following the interactive experience, visitors proceed into the Sphere to view a film projected onto the inner layer of the dome, enveloping them within its immersive environment. The film incorporates advanced audio and sensory technologies, enhancing the viewing experience with occasional bursts of wind, an in-auditorium climate system, and seat and floor vibrations. This cutting-edge technology creates a truly unique and captivating experience for visitors.

# Conclusion

My study tour to Australia, Singapore, and America has provided invaluable insights into the vocational education and training (VET) systems in these countries. A consistent theme that emerged during my visits to various schools and institutions was the strong focus on equipping students with practical, industry-specific skills and knowledge, as well as fostering meaningful connections between businesses and schools, ultimately bridging the gap between education and the workforce. VET subjects were taught by highly skilled trainers who were experts in their field, and extensive preparation work was done to guide student choice when selecting VET subjects.

In Australia, Singapore, and America, VET subjects were introduced in Year 9 or 10, and schools worked closely with external agencies to provide students with individualised guidance and support. Trainers played a significant role in preparing students for work placements, visiting workplaces multiple times during each placement, and ensuring students were well-prepared to introduce themselves to host employers. This approach has proven successful in engaging students who may have otherwise disengaged with school, providing them with a career path and a sense of purpose. Most work placements within the sites visited were for longer periods of time than that completed by NSW VET in school students. Students who participated in work placements for extended durations or regular intervals, such as full-day placements each week, showed a higher likelihood of securing employment upon completing their VET studies, demonstrating the value of prolonged industry exposure in enhancing employability. The schools I visited have established robust partnerships with work placement hosts and local businesses by actively involving them in school events, information sessions, and other initiatives, thereby nurturing a culture of collaboration, goodwill, and mutual support, which benefits both the students and the community. In Singapore, work placements are highly esteemed as an integral component of VET studies, with businesses actively contributing to the development and refinement of VET programs. This collaborative approach ensures that the programs remain industry-relevant, effective, and aligned with the needs of the workforce, providing students with a competitive edge in the job market.

The schools I visited had highly successful VET courses, supported by a range of external agencies and funding sources. They have extensive resources on site, including state-of-the-art facilities and equipment, and sufficient trainer numbers to staff all positions. The close relationship between schools and work placement hosts was evident, with businesses assisting in VET subject selection evenings and providing valuable industry insights.

However, a common concern expressed by schools was the challenge of securing sufficient funding to continually update technology used for VET courses. Resources were typically acquired through external grants, donations from agencies, and local businesses, highlighting the persistent efforts of staff to ensure students had access to the latest technology and industry-standard equipment.

Overall, my study tour has demonstrated the importance of VET programs in providing students with the skills and knowledge required to succeed in their chosen careers. The collaborative approach between schools, external agencies, and industry partners has been instrumental in delivering successful VET programs, and I believe this model can be replicated in other countries to great effect.

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