



Educating for Tomorrow's Industry

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Abstract

Education should be about adapting to change, yet some of the most powerful countries in the world are still very much entrenched in using an antiquated model that has been used, discussed, adapted, reused and discussed once more, repeatedly without real change. Why is it that, as Educators, we look at Scandinavian countries and feel they have it right, yet we continue with the same model of education and do not adapt? We look at our world, we see the technological changes that are occurring every year, yet we continue with the same education model. In Australia, we look at NAPLAN results, and Public Schooling data and wonder why our children are going backwards in reading, mathematics and science, yet we continue to teach using predominately the same model we used before. We look at the statistics of the high percentage of unskilled workers and wonder why specific trades and industries are not being considered by secondary school age students. We create a culture that a university education on leaving school is the way, yet research by The National Institute of Labour Studies at Flinders University in Australia showed that between 2008 and 2014 the proportion of new university graduates in full-time employment dropped from 56.4 per cent to 41.7 per cent. Are Educators not concerned with this decision to not adapt our pedagogy to support the future, or are they? In Australia, Teachers are leaving the profession in significant numbers — the latest figures from the Australian Bureau of Statistics suggest 53 per cent of people who hold a teaching degree do not currently work in education. (Lamacraft, 2016) [1] Why do we, as a society, refuse to look at the world, or our own country, or those that live in our community, or most importantly, the young people that are our future and adapt to change?

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To change the traditional education model in Australia is a difficult prospect. You see a model that consistently lets down their students. In 2018, how is it possible that 17 000 Grade 12 students did not successfully graduate high school in Queensland, Australia. That is 17 000, 17-year-old students' who did not get the opportunity to fulfil their dream of having a career after completing their education through our current system. This is a crime.

To know that all students have a defined and unique way of learning, yet not to offer them the opportunity to learn in that preferred way is pedagogically unsound and the implications for Educators are that this must be discussed and changed.

The change comes in the model of industry and education – knowing what individuals want to learn, listening to industry about what they are looking for in employees, and creating a system that allows both to prosper for the benefit of the next generation. To create the highest standard of school-based apprentice, trainee, or intern for employment in any industry sector you need a pathway of targeted recruitment, a rigorous education program, training and character development targeted to develop the individual student. These are the foundations of this education model. We then need to locate and engage with students who are ready and willing to engage with the industry sector they wish to have a career. They must also learn and achieve a Certificate in Education for Queensland, Australia, while acquiring the skills that are linked to the highest industry standards. This is achieved through integrated programs that have been developed with industry for industry. We also need to teach students how to be employable through training and skill programs developed by industry employability consultants. As Educators, we must realise and develop partnerships and networks with industry sectors, so we have their investment in our students' futures.

Educators of this model of teaching must show a depth of in their understanding of multiple learning styles and a pedagogical understanding that content should be industry driven and relevant. Employment Consultants need to have a complex understanding of entry-level opportunities with network connections to industry sectors. These people are the industry connections for further study in certificate and diploma courses that are industry sector specific. What differs from the contemporary post-industrial model of learning is as follows, a 'pathway to learning by doing'.

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<i>Work-Based Learning Model</i>	<i>Contemporary Post-Industrial Model</i>
20 weeks of schooling per year	41 weeks of schooling per year
28 weeks of work experience per year	5.7 weeks of work experience per year
4 weeks leave per year	12 weeks of leave (holidays) per year

Table 1: Timeline Comparisons of Work -Based and Contemporary Learning Models

By focusing on specific learning programs to achieve State Education Standards as well as vocational certificate and diploma credentials, career opportunities in sector, skill development for industry standards, employability skill growth, and mentoring with industry sector leaders, we are allowing students to take control of their career pathways.

In 2016, the model showed signs of success:
98% of students consistently graduate with the Certificate of Education.
90% of students graduate with an apprenticeship, traineeship or internship.
The 10% that did not achieve an apprenticeship, traineeship or internship continue at the college to improve their skills, as well as achieving more qualifications in pre-university preparation courses, or vocational educational courses.

Table 2: Completion Data of 2016 Young People - Robina Campus

Most of Industry sector choose students that graduate from a learning model based around employability skills and workforce specific knowledge. Where to from here – Do we continue to follow the educational changes of other countries?

Given that the future of learning is evolving, and stakeholders such as parents, students, Industry leaders, Secondary Educators, Educational theorists and Tertiary Education Leaders, have all acknowledged that having 17000, 17-year-old students being left behind is not a positive approach to learning, a change that accommodates HOW people of the 21st century learn is imperative. The PISA ranking of Australia (2017) is declining yet we still insist on continuing with the same education model that has not supported the improvement of literacy, numeracy or science. (Australian Bureau of Statistics, 2014) [2]

The introduction of P-TECH (Pathways to Technology) schools to the educational arena in 2011 was commenced in a high school in the USA (Brooklyn) as a partnership between the New York City Department of Education, the City University of New York and corporate business - IBM. The US model covers six years of schooling comprising the traditional four years of high school plus the equivalent of two years of college. Students were selected by a ballot, not their academic record which is an interesting concept to consider. There was no way of knowing what a student's prior learning ability and success was, or if their learning style would, or could, adapt to this learning model.

The Brooklyn model's annual data showed that students not only adapted to the pedagogical differences, but they also embraced them and succeeded in doing so. The US data has continued to improve and astound to the point where that in 2013, Stanley Litow, the President of the IBM Foundation, joined the CEO of Skilling Australia, Nicholas Wyman, and together with a group of enthusiastic people, successfully lobbied for support for an Australian P-TECH program.

By 2015, the Australian P-TECH model began rolling out at two Victorian high schools, thanks to Australian Federal Government seeding funding for a two-year pilot. State and territory governments got on board with their support. In 2016, the P-TECH Australia program was extended toward 10 sites. The global program operates in more than 80 schools. By mid-2018, 14 Australian pilot sites will be operating. (Skilling Australia Foundation, 2018) [3]

The P-TECH concept has been embraced and is expanding throughout Australia. Still the question remains: Do we embrace a model driven by science, maths and technology alone, or do we address the economic issues around Australia's skill shortage and consider adding to the depths of the model with all sectors of industry?

Each year, the Department of Jobs and Small Business produces employment projections by industry, occupation, skill level and region for the following five-year period. These employment projections are designed to provide a guide to the future direction of the labour market, however, like all such exercises, they are subject to an inherent degree of uncertainty.



The 2017 projections are based on June 2017 Labour Force Survey data for total employment, the May 2017 Labour Force Survey quarterly employment data and the total employment forecasts and projections published in the 2017-18 Budget.

Employment is projected to increase in 16 of the 19 broad industries over the five years to May 2022. Health Care and Social Assistance is projected to make the largest contribution to employment growth (increasing by 250,500), followed by Professional, Scientific and Technical Services (126,400), Construction (120,700) and Education and Training (116,200). Together, these four industries are projected to provide more than half of total employment growth over the five years to May 2022.

(Anlezark, 2006) [4]

The collaborative partnership between education and employment in Australia is starting to be bridged. Human Resources, and specialists in People and Culture within Industry are realising that the workforce of tomorrow is seeking employees that have a multitude of varying skills. Education is seeing this as '21st Century Skills'. This term has been simplified into what is known as 'The 4 C's' and focuses on critical thinking and problem solving, collaboration, communication, creativity and innovation – all the skills that are required for success in tomorrow's workforce.

Education systems need to respond to a changing world. It is our duty to do whatever we can to help our students connect learning with real life and to provide them with skills for prepare them success. As the global economy expands, our need to prepare the next generation for new careers becomes imperative. When education and industry work together, students then become our most valuable assets in the 21st century. (Skilling Australia Foundation, 2018) [5]

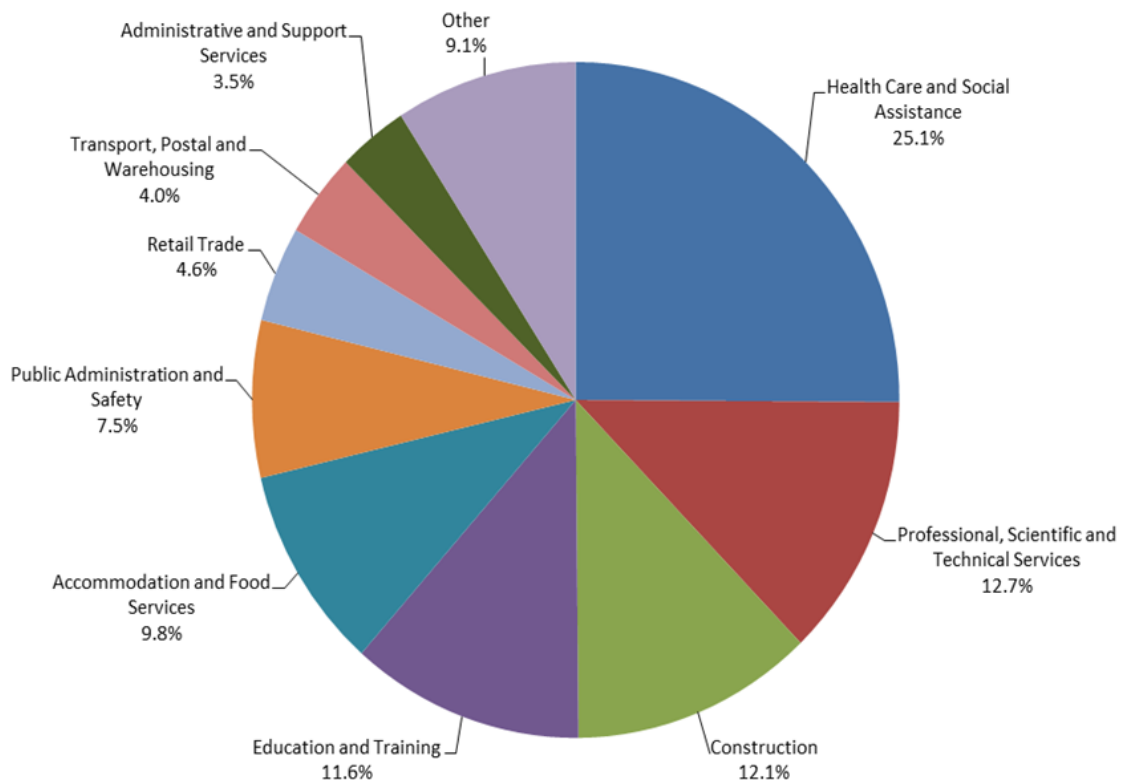


Figure 1: Employment projections for the Five Years to May 2022

'Other' consists of Financial and Insurance Services; Arts and Recreation Services; Rental, Hiring and Real Estate Services; Other Services; Information Media and Telecommunications; Mining; and Wholesale Trade. Agriculture, Forestry and Fishing; Electricity, Gas, Water and Waste Services; and Manufacturing are excluded from the chart as they are not projected to grow over the five years to May 2022.



Given these projections, we must consider how the working world for tomorrow's students will need to be developed for their success. Educators and Educational Institutions can no longer continue with the present model of one dimensional learning. Not all students want to go to University straight from secondary schooling. They want and are being taught to learn through the experience or 'doing'. In a technological world of handheld devices, we educators need to adapt our teaching practice to be a consultative process between understanding our students needs for their own future, while also understanding what our country needs economically through industries for a successfully outcome. We must discuss the needs of the tomorrow's world with not only industry, but also with employment specialists and academics who will guide the pedagogical changes and governments to ensure that our education model reflects the needs of the future. (Labour Market Information Portal, 2018) [6]

References

- [1] Lamacraft, T. (2016, October 1). University graduates struggle to find full-time work as enrolments increase, study finds. Retrieved from [www.abc.news.net:
http://www.abc.net.au/news/2016-09-29/uni-graduate-job-prospects-in-decline/7890562](http://www.abc.net.au/news/2016-09-29/uni-graduate-job-prospects-in-decline/7890562)
- [2] Skilling Australia Foundation. (2018, January 21). Why P-Tech? Retrieved from <http://www.ptech.org.au>: <http://www.ptech.org.au/why-p-tech/>
- [3] Australian Bureau of Statistics. (2014, July 29). 4260.0 - Outcomes from Vocational Education and Training in Schools, experimental estimates, Australia, 2006-2011. Retrieved from <http://www.abs.gov.au>:
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4260.0Main+Features32006-2011>
- [4] Anlezark, A. K. (2006, April 18). National Centre for Vocational Education Research. Retrieved from [Have school vocational education and training programs been successful?:
www.ncver.edu.au](http://www.ncver.edu.au)
- [5] Association, N. E. (2017). An Educator's Guide to the "Four Cs" - Preparing 21st Century Students for a Global Society. National Education Association, 2.
- [6] Labour Market Information Portal. (2018, February 9). Employment Projections. Retrieved from [Australian Government, Department of Jobs and Small Business:
http://lmip.gov.au/default.aspx?LMIP/EmploymentProjections](http://lmip.gov.au/default.aspx?LMIP/EmploymentProjections)