



The VET sector post COVID-19

Tom Karmel
April 2022

Mackenzie Research Institute
E: tom.karmel@hotmail.com
info@mri.edu.au

The VET sector post COVID-19*

Tom Karmel

Executive summary

With the significant dislocation in the labour market it was not surprising that government moved quickly to address a significant decline in the number of apprentices and trainees. My assessment (Karmel 2021) was these programs were successful in maintaining the numbers of apprentices and trainees overall. However, I also pointed out that the apprenticeship and traineeships system is a bit 'all over the place', comprising a core around the trades where it is a vital part of the skills formation system, and the remainder where it plays a small and sometimes trivial role in comparison to the broader VET sector. I suggested that there is a risk that the non-apprenticeship traineeship sector of VET is being neglected at the expense of the apprenticeship and traineeship system. In fact, apprentices and trainees make up a very small proportion of VET (around 10 per cent). This paper is intended to focus on this issue by looking more generally at how VET has fared during COVID-19.

In looking at VET, we make a number of distinctions. The first is between those students who are apprentices and trainees and those who are not. The second is a distinction between government funded students and privately funded students. While we can look at trends overall, government funded places are of particular interest because these show us the impact of government funding not aimed at apprenticeships and traineeships. One particular issue we try to grapple with is the extent to which VET is orientated to labour market trends. In this regard, we focus on that part of VET which is likely to be important in skills formation – qualifications at the diploma level and Certificates III and IV. In looking at labour market prospects we make use of the work undertaken by the National Skills Commission which has assigned 6 digit ANZSCO occupations ratings in terms of current job prospects (does an occupation have a current shortage) and future job prospects reflecting the likely demand for the occupation over the coming five year period (National Skills Commission, 2021).

The historical data does indeed raise concerns. We have seen very significant declines in VET activity since 2015 and a further decline as COVID-19 emerged in 2020. Of some comfort, the declines in completions were more muted (that is, much of the decline in student numbers was in those not completing a full qualification).

Of course, it might be the case that this decline in VET activity reflects structural change that was responding to the needs of the labour market. Certainly, university education has been expanding at VET's expense and we have seen degrees become the entry level qualification for many occupations.

* I would like to thank Bruce Mackenzie, Gerald Burke and Robin Shreeve from the Mackenzie Research Institute Advisory Board for their comments on a draft.

To throw some light on the relationship between VET activity and the structure of the labour market we related the output of the VET sector to patterns of employment in the labour market and also to the labour demand categories created by the National Skills Commission for the Priority Occupation List. In looking at VET qualification completions we concentrated on qualifications at the diploma or higher level, and Certificates III and IV. Lower level and non-AQF qualifications were assumed to be preparatory in nature and of less relevance to skills formation.

Points to emerge include:

- The output of the non-apprentice and trainee part of VET is very different in occupational terms; trades are the most important occupation group for apprentices and traineeships while community and personal service workers are the most important occupation group for the rest of VET.
- The output of the VET sector aligns reasonably well with historical employment patterns evident in the occupational distribution of employed persons with a Certificate III or IV or diploma. One qualification here is that diplomas are less useful as entry level qualifications into the professions than they once were.
- The output of the VET sector aligns reasonably well with the National Skills Commission's assessment of labour market demand. Of some interest is that apprentices and trainees are directed to occupations with current shortages, while the rest of VET is more focused on occupations where labour demand should be strong.

Our conclusion in looking at the impact of COVID-19 on apprentices and trainees was that governmental response appeared to have addressed any short-term declines in numbers. We are not so sanguine about the rest of VET. First, governments need to pay attention to VET as a whole – apprentices and trainees are a relatively small part of the sector, accounting for around 10 per cent of VET and they are not representative of the sector. Second, numbers have declined significantly, despite the fact that the output of the sector appears to align with the needs of the labour market reasonably well. Initial evidence is that qualifications being obtained in VET are in the right areas. The impact of COVID-19 may not be that dramatic but this is on top of very significant declines in both government funded and privately funded VET activity since 2015. It should also be noted that the conventional wisdom is that educational participation tends to increase when the economy is bad and therefore, we might have expected the VET numbers to have at least stabilised. Why VET is not maintaining its enrolments must be an issue for overall skill formation.

In this context the contrast between higher VET diplomas and lower level VET certificates needs further exploration. Government now funds relatively low numbers of diplomas (in 2020 there were 73,300 non-apprentice/trainee diploma commencements funded by government compared to 343,600 Certificates III and IV). It would appear that Australia's skills formation focuses on degrees in higher education and low skill/intermediate skills in VET. To some extent this may mirror the workforce where we see professional jobs and low

skilled jobs growing but few working in the intermediate level at the para-professional level. The skilled immigration programs, at least prior to the pandemic, may be crowding out local training in the higher intermediate skills space. Another characteristic of VET in Australia is that it does not assist diploma level qualifications - the emphasis is on entry level training, as embodied by apprenticeships and traineeships, as distinct from general education which provides a foundation for lifelong learning. The terminal nature of the majority of diplomas further undermines diploma level study. In this regard, there are no strong pathways between diplomas and degrees – for example a diploma in nursing does not articulate easily into a nursing degree.

Such factors do not support growth in diploma level qualifications. *Does it matter?* It matters if we believe that VET has a more important role in skills formation than becoming the residual provider of lower level training with a narrow industry focus. This is something that needs policy.

We would need to reconceptualise VET if we are serious about addressing VET's decline. First, VET needs to provide general education, as well as technical training, as the basis for lifelong learning. Second, we need to build pathways such that individuals can progress from certificates to diplomas to degrees. This makes particular sense in certain areas such as community care and health. Such a structure would give VET a strong sense of purpose rather than being the residual provider of lower skill training. One issue is that funding bedevils any reform in this area where funding of VET and higher education are so different. Some integration of funding would be essential so that either strong VET providers can teach up to the degree level, or universities incorporate vocational streams. The latter would be a real challenge given the preoccupation of universities with research, which sits badly with a vocational orientation. The structure of secondary schooling also does not help, with 'academic' education dominating and VET in schools seen as an option only for those who cannot achieve academically.

1. Introduction

In an earlier paper (Karmel 2021) I looked at the impact of COVID-19 on apprentices and trainees. With the significant dislocation in the labour market it was not surprising that government moved quickly to address a significant decline in the number of apprentices and trainees. In addition to JobKeeper subsidies – aimed at protecting jobs - the Federal government introduced the *Supporting Apprentices and Trainees* and the *Boosting Apprenticeship Commencements* wage subsidy programs directed to assist businesses in retaining their apprentices and trainees and encouraging employers to take on additional apprentices and trainees. My assessment (Karmel 2021) was these programs were successful in maintaining the numbers of apprentices and trainees overall. I argued that we do not need to worry too much about the impact of COVID-19 on skills formation of those occupations where the apprenticeship and traineeship system is dominant, namely automotive and engineering, construction, electrotechnology and hairdressers. However, I also pointed out that the apprenticeship and traineeships system is a bit ‘all over the place’ in the sense that it comprises a core around the trades where it is a vital part of the skills formation system, and the remainder where it plays a small and sometimes trivial role in comparison to the broader VET sector. I suggested that apprenticeships and traineeships play a very minor role in most occupations, and there is a risk that the non-apprenticeship traineeship sector of VET is being neglected at the expense of the apprenticeship and traineeship system. This paper is intended to focus on this issue by looking more generally at how VET has fared during COVID-19 and whether we face potential skill shortages in non-trade occupations.

In looking at VET, we make a number of distinctions. The first is between those students who are apprentices and trainees and those who are not. The second is a distinction between government funded students and privately funded students. While we can look at trends overall, government funded places are of particular interest because these show us the impact of government funding not aimed at apprenticeships and traineeships.

One particular issue we try to grapple with is the extent to which VET is orientated to labour market trends. The important issue is the extent to which student places are going to those courses where there are good labour market prospects. In this regard, we focus on that part of VET which is likely to be important in skills formation – qualifications at the diploma level and Certificates III and IV. We are less interested in Certificates I and II which can be seen as preparatory qualifications. In looking at labour market prospects we make use of the work undertaken by the National Skills Commission which has assigned 6 digit ANZSCO occupations ratings in terms of current job prospects (does an occupation have a current shortage) and future job prospects (does the occupation face future demand which is strong, moderate or soft). The future job prospect projects are intended to reflect the likely demand for the occupation over the coming five year period (National Skills Commission, 2021). My interest is the extent to which VET completions match up with the National Skills Commission’s view of labour demand.

In the next part of the paper, we present trends in VET commencements and completions. In order to make the description reasonably succinct we present the data at the major ANZSCO occupation level. In section three we examine how the VET sector output aligns with the general labour market, as observed in the most recent census for which data are published and in section four, we turn our attention to the National Skills Commission's assessment of labour demand. We outline the methodology used to relate VET training to labour demand. This is somewhat complicated and uses census data to provide a metric which allows us to group occupations together. For example, the National Skills Commission classifies some 57 occupations as having a current shortage and strong future demand, but this can only be readily interpreted if we know the relative size of these occupations and the prevalence of VET qualifications in these occupations. The census data of employment by occupation and qualification allow us to aggregate occupations in a meaningful way and provides a benchmark which we use to judge how well the VET sector aligns with areas of the labour market in shortage or, according to the National Skills Commission, with strong demand for labour over the next five years or so. We conclude with some final comments.

2. Broad trends in VET commencements and completions

We begin with two descriptive tables. Rather than present data on VET enrolments we look at commencements representing a cohort entering VET. In Table 1 we show commencements classified by whether the student is an apprentice or trainee attending off-the-job training, by funding source and by level of education. In respect of the last of these classifications we aggregate the data into three categories: diploma or higher; Certificate III and IV and, Certificates I and II and non-AQF programs. We argue that the first two of these categories are important in terms of skills formation for the labour market - the last category is better thought of as a pathway or foundation course, hopefully leading to a higher level qualification.

Table 1: Commencing enrolments by funding source and whether apprentice or trainee

		2015	2016	2017	2018	2019	2020	Change 2015 to 2019	Change 2019 to 2020	Share over 2015 to 2020
Diploma and higher										
Government funding	Apprentices and trainees	8673	4485	4007	3816	4841	4796	-44.2	-0.9	0.2
	Not apprentices and trainees	133519	92178	78943	69797	87452	73300	-34.5	-16.2	4.2
No government funding	Apprentices and trainees	3069	1804	1063	608	809	1111	-73.6	37.3	0.1
	Not apprentices and trainees	494314	276520	194900	159233	176361	168915	-64.3	-4.2	11.4
Cert III&IV										
Government funding	Apprentices and trainees	274395	136813	155185	123604	146484	103772	-46.6	-29.2	7.3
	Not apprentices and trainees	588542	417851	376017	344165	402095	343555	-31.7	-14.6	19.2
No government funding	Apprentices and trainees	25966	17352	15137	13003	8565	7144	-67.0	-16.6	0.7
	Not apprentices and trainees	638135	468326	448012	417705	441586	406614	-30.8	-7.9	21.9
Cert I&II and non-AQF										
Government funding	Apprentices and trainees	19235	14684	19752	14794	15581	12814	-19.0	-17.8	0.8
	Not apprentices and trainees	526575	447646	405737	365549	397767	364074	-24.5	-8.5	19.5
No government funding	Apprentices and trainees	2393	1408	1483	1162	1366	709	-42.9	-48.1	0.1
	Not apprentices and trainees	365157	336880	338499	299774	306633	255895	-16.0	-16.5	14.8
Total		3079973	2215947	2038735	1813210	1989540	1742699	-35.4	-12.4	100

Note: Apprentices and trainees refer to those undertaking off-the-job training. Funding source refers to the highest funding source. Source: VOCSTATS TVA

A number of features are worth noting:

- Commencements at Certificate III or IV and higher represent about two thirds of commencements. That is, there is a very substantial amount of lower level VET.
- Apprentices and trainees are mostly at the Certificate III and IV level and represent less than 10 per cent of commencements. It is a mistake to think of the VET sector in terms of just apprentices and trainees.¹
- Apprentices and trainees are almost totally government funded.
- Putting apprentices and trainees to one side, government funded commencements are lower than non-government funded commencements at all levels. In particular, the commencements in diploma level and above funded by non-government are more than double that funded by government.
- The number of commencements has declined dramatically over the period 2015-2020, with decreases in every category.

This last point is worth exploring, because it suggests that any change in activity due to COVID-19 is less important than the general trend since 2015. We see that commencements declined as COVID-19 hit but that decline was on top of a larger decline that had occurred earlier. We note that in respect of the decline between 2019 and 2020, the declines in government funded commencements were particularly noticeable in respect of diplomas and Certificates III and IV.

One of the characteristics of the VET sector is that completion rates are relatively low. While acknowledging that there are many students who fail to complete a course because ‘they have got what they wanted out of the training’ the evidence that completion matters is pretty convincing (see for example, *The value of completion* (Karmel and Fieger2012)). Thus we complement our data on commencements with data on completions (Table 2).

In this table we present similar data on completions to the commencement data presented in Table 1, with the exception that we drop the distinction between students who are apprentices and trainees and those who are not.²

¹ This finding is robust in respect of which measure of training activity we use. If we look at training activity in terms of FYTEs (full-time training equivalents) we see that over 2015-2020 apprentices and trainees undertaking off the job training constituted around 11 per cent of training activity (with government funded making up 10.5 per cent points). The remaining training activity is fairly evenly split between government funded and non-government funded.

² One reason is that the data on apprentice and trainee completions from the NCVET Apprentice and Trainee collection is likely to be much more accurate than from the TVA data (which is a provider view of the data)

Table 2: Completions by education level and source of funding

	2015	2016	2017	2018	2019	2020 (Preliminary)	Change 2015- 2019	Share 2015-2020
Diploma and higher								
Government funding	35486	36992	35758	36031	36513	32890	2.9	4.0
No government funding and other	109167	112648	115267	102749	97105	90714	-11.0	11.7
Certificate III&IV								
Government funding	258164	223417	211104	209306	214435	192795	-16.9	24.4
No government funding and other	241833	222179	211413	204211	219805	183624	-9.1	23.9
Certificate I&II and non-AQF								
Government funding	159219	174315	155022	147527	148449	152127	-6.8	17.5
No government funding and other	148973	153012	160971	189618	177478	166661	19.1	18.6
Total	952842	922547	889522	889420	893790	818824	-6.2	100.0

Source VOCSTATS TVA program completions

We see, as expected, that completions are at a much lower level than commencements. In fact, the ratio between completions and commencements give an indication of the completion rate. A back of the envelope dividing completions over 2016-2019 by commencements 2015-2018 gives a completion rate of around 46 per cent.³

What is particularly interesting about this table is that the trends differ significantly from those seen in commencements. The overall decline (at least up to 2019) is at a much lower level that occurred for commencements, suggesting that completion rates have increased. In fact, the number of completions increased in government funded diplomas and in non-AQF qualifications without government funding. The much more modest decline in completions suggests that the output of the VET sector has not been decimated to the extent that the commencement numbers indicate. That said, lower level and non-AQF completions make up over a third of completions, with diplomas and higher contributing around 16 per cent and Certificates III and IV around 48 per cent. If we take the diploma and higher, and Certificates III and IV, as the core of the contribution to skills formation we see that VET trains around 500,000 persons per year (that is, this is the number with a new VET qualification at Certificate III level or higher).

Lags in the data mean that we cannot see the full effect of COVID-19 on completions (the 2000 data are preliminary). However, the trends in commencements suggest that there will be further declines in completions in 2020.

To give further flavour we present the completions data in a slightly different way (Table 3). We concentrate on qualifications at the Certificate III or higher level, and cross classify by the broad occupation relating to the training. We also make use of a NCVER classification that splits the data by apprentice and trainee status.

³ This calculation assumes a one year lag between completion and commencement. We did not use completion data for 2020 because it is preliminary and will be revised upward in coming collections.

Table 3: Completions in diplomas or higher or Certificates III/IV in 2019 by occupation and whether an apprentice or trainee

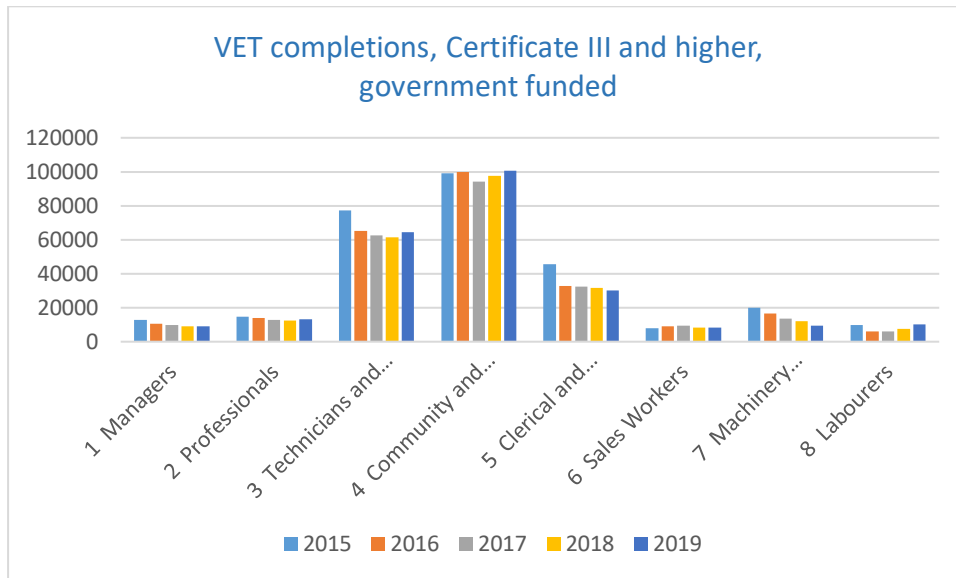
	Apprentices and trainees undertaking off-the-job training	Not apprentices and trainees	Award only
1 Managers	1051	40205	1380
2 Professionals	291	73102	1813
3 Technicians and Trades Workers	31112	81135	6742
4 Community and Personal Service Workers	15185	158264	5112
5 Clerical and Administrative Workers	7772	71620	2340
6 Sales Workers	5081	13306	166
7 Machinery Operators and Drivers	5384	9478	253
8 Labourers	2029	9567	442
GEN codes	111	7869	249
Not known			
Other			
Total	68040	464538	18486

Source: VOCSTATS TVA program completions

We see that the apprentice and trainee completions are dominated by the trades with substantial numbers in community and personal services. By contrast, the non-apprentice and trainee completions are dominated by community and personal services – although it is interesting to note that even in the trades the number of non-apprentice and trainee completions is much larger than the number of apprentice and trainee completions.

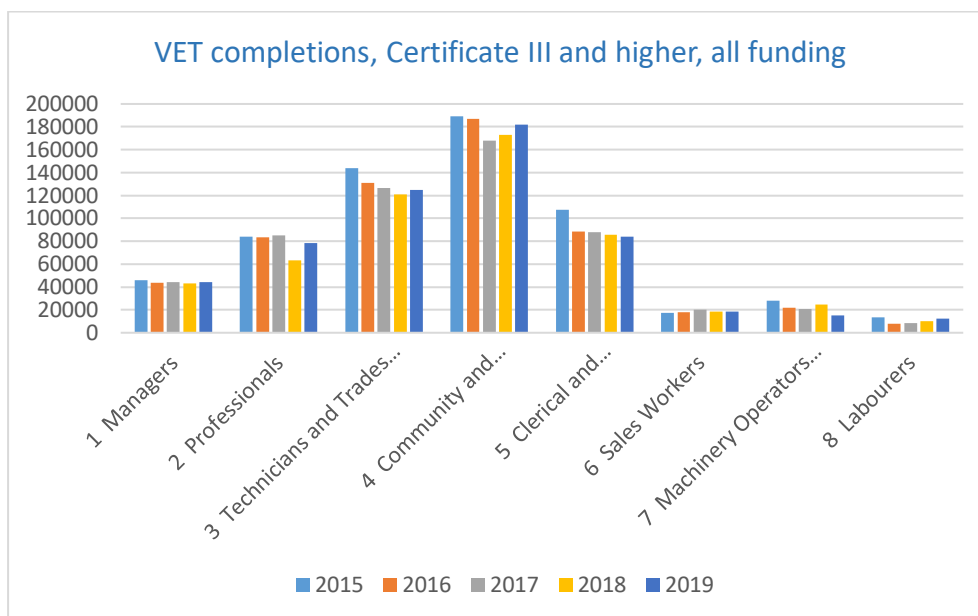
Table 3 presents a snapshot of completions in 2019. In Figure 1, we show the trends for the major occupational groups (government funded) and in Figure 2 we have the comparable data from all funding sources.

Figure 1 VET completions at the Certificate III level or higher, government funded, 2015-2019



Source: VOCSTATS TVA program completions

Figure 2 VET completions at the Certificate III level or higher, all funding sources, 2015-2019



Source: VOCSTATS TVA program completions

On the whole there have been declines from 2015 in all occupation groups, although in some cases the declines are minor. In terms of overall numbers completions are highest in Community and Personal Services, Technicians and Trades, Clerical and Administrative workers and Professionals. In each of these groups we have seen declines from the completion numbers in 2015. In general, the declines are similar for the government funded and total numbers, with the exception of Community and Personal Service workers where the government funded completions in 2019 are slightly higher than the preceding years.

3. Alignment of VET to the labour market

We now attempt to relate the completions to the needs of the labour market. Our general approach is to first consider the distribution of qualifications across occupations in the labour market and compare that distribution with the distribution of qualifications across completing VET students. We use census data for employed persons. These data are very comprehensive but a little dated given that the most recent census data are for 2016.

To give a flavour of our approach, we present the data by occupation at the major group level. Tables 4 and 5 show the distribution of qualifications across occupations. In Table 4 we present the number of persons with a particular qualification as a percentage of persons in an occupation, while in Table 5 we show the distribution of qualifications across occupations.

Table 4: Employed persons and highest post-school qualification, as per cent of occupation (2016)

	Post-graduate degree	Degree	Diploma	Certificate III & IV	Other	Total
Managers	13.1	23.9	13.8	16.5	32.8	100
Professionals	25.6	49.0	10.0	4.4	11.0	100
Technicians and Trades Workers	1.8	6.5	9.0	55.2	27.6	100
Community and Personal Service Workers	4.4	13.4	19.3	22.9	39.9	100
Clerical and Administrative Workers	6.2	16.5	14.0	15.7	47.6	100
Sales Workers	3.0	10.6	8.8	13.3	64.4	100
Machinery Operators and Drivers	1.5	5.0	5.7	24.4	63.4	100
Labourers	1.7	6.6	5.6	18.5	67.6	100
Inadequately described	8.4	17.8	10.8	19.3	43.7	100
Not stated	3.9	10.2	5.7	15.5	64.6	100
Total	9.6	20.8	11.1	20.1	38.4	100

Source: 2016 Census of Population and Housing

Table 5: Employed persons and broad occupation, as per cent of highest post-school qualification (2016)

	Post-graduate degree	Degree	Diploma	Certificate III & IV	Other	Total
Managers	17.9	15.2	16.4	10.9	11.3	13.2
Professionals	59.3	52.5	20.1	4.9	6.4	22.3
Technicians and Trades Workers	2.6	4.3	11.0	37.6	9.8	13.7
Community and Personal Service Workers	4.9	6.9	18.7	12.3	11.2	10.8
Clerical and Administrative Workers	8.8	10.8	17.3	10.7	17.0	13.7
Sales Workers	2.9	4.8	7.4	6.2	15.8	9.4
Machinery Operators and Drivers	1.0	1.5	3.2	7.6	10.3	6.3
Labourers	1.6	3.0	4.7	8.7	16.7	9.5
Inadequately described	0.8	0.8	0.9	0.9	1.1	1.0
Not stated	0.1	0.1	0.1	0.2	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0	100

Source: 2016 Census of Population and Housing

There is nothing particularly surprising about these tables. Clearly, there is no exact match between qualifications and occupation, so we see some labourers with a post-graduate qualification. Equally, there are multiple ways to enter an occupation and thus we see a number of people without qualifications in professional occupations. Nevertheless there is a broad correspondence between qualification and occupation. We see a concentration of persons with a diploma in Community and Personal Services, Clerical and Administrative Occupations and Managers, and a concentration of persons with a Certificate III or IV in the Technicians and Trades, Machinery Operators and Drivers and Community and Personal Service Workers.

In Table 6 we compare the distribution of qualifications (at the diploma or higher or Certificate III/IV level) completing in 2019 with the distribution of employed persons with a diploma or Certificate III or IV from the census in 2016.

Table 6: Distribution of qualifications (at the diploma or Certificate III and IV level) completed in 2019, compared to census distribution of employed persons with a diploma or Certificate III and IV

	Government funded	Other than government funded	Total	2016 Census distribution
1 Managers	3.5	11.1	7.8	12.8
2 Professionals	5.2	20.5	13.8	10.3
3 Technicians and Trades Workers	25.8	19.0	22.0	28.1
4 Community and Personal Service Workers	40.1	25.6	32.0	14.6
5 Clerical and Administrative Workers	12.0	17.0	14.8	13.0
6 Sales Workers	3.3	3.3	3.3	6.7
7 Machinery Operators and Drivers	3.8	1.9	2.7	6.0
8 Labourers	4.0	0.7	2.1	7.3
GEN codes	2.3	0.9	1.5	
Not known				
Other				
Total	100.0	100.0	100.0	100.0
Note: Census percentages do not add to 100 because the categories inadequately described and not stated are omitted.				

Source: VOCSTATS TVA program completions, Census of Population and Housing 2016

There are a number of reasons why these would not line up precisely. First, graduates often end up in jobs in occupations not related to their qualifications. Second, expected qualification levels change over time as the population becomes more educated. For example, many professions now require a degree as an entry qualification rather than a diploma as in earlier times. Similarly, a number of occupations outside the professions and trades are requiring qualifications – examples being childcare workers and personal carers. Nevertheless Table 6 shows some alignment between completions and employment patterns. However, there are a number of noticeable deviations.

Completions from government funded students are over-represented among Community and Personal Service Worker occupations (that is, a higher percentage of completions in the

occupation relative to the occupation’s share of employment), most likely reflecting the government push to improve qualifications in caring occupations. However, the completions are under-represented in Managerial and Professional occupations. Technician and Trade qualifications remain important for government funded places, and this is in line with the current share in employment for persons with qualifications at this level.

The patterns among graduates whose training was not funded by government is somewhat different. The completions are over-represented in professionals, community and personal service workers, and clerical and administrative workers. Clearly, the private sector has a different focus from that of government.

4. Relating completions to the National Skills Commission’s assessment of labour demand

We now attempt to relate the pattern of completions to the occupational assessments undertaken by the National Skills Commission. The Commission has assessed the employment prospects for 799 six digit ANZSCO occupations. There are two elements to the assessment: the current labour market assessment which divides occupations into those judged to be in shortage and others; and an assessment of future demand in which occupations are judged to have strong, moderate or soft future demand. In the 2021 assessment, 153 occupations are assessed as being in shortage and 265 assessed as having strong future prospects, as is seen in Table 7.

Table 7: Skills priority list categories, 2021

Current labour market assessment	Future Demand Indicator	Count of (6 digit) occupations
Shortage	Strong future demand	57
Shortage	Moderate future demand	98
Shortage	Soft future demand	9
Total shortage		153
No shortage	Strong future demand	208
No shortage	Moderate future demand	394
No shortage	Soft future demand	44
Total no shortage		646

Source: National Skills Commission 2021

Our challenge is to line up VET completions (at the diploma or higher and Certificate III and IV level) with these categories. To do this we need to solve two problems. The first is that the VET qualifications are assigned a four digit ANZSCO not a six digit code. The second is that we need a metric to aggregate qualifications and occupations if we wish to answer the question of how many VET completions are lined up with, say, the current shortage classification.

First, we convert six digit codes to four digit codes by dropping the last two digits. If it is the case that the four digit occupations fall in more than one labour demand category, we prorate using the number of occupations.⁴ This enables us to assign each 4 digit occupation to one of the labour demand categories (or to assign partially). A second complication is that the NSC labour demand categories are not exhaustive and there are a substantial number of occupations, mostly at the lower skill part of the labour market, that are not categorised. To address this we included another category: *not rated*. A further complication is that the National Skills Commission 6 digit ANZSCO codes do not fall into the ‘not further defined’ categories which occur in the ANZSCO classification at the 3 digit, 2 digit and 1 digit ANZSCO levels. This is not of great consequence for the census data where we would lose only around 5 per cent of employment by omitting the ‘not further defined’ categories, but is of more consequence in the NCVER completions data in which substantial numbers of courses are assigned to ‘not further defined’ categories. For example, in the 2019 completion data there are over 8,000 completions coded to *5120 Office and Practice Managers – nfd* and, overall, around 10 per cent of completions would be omitted if we discard the ‘not further defined’ categories. Rather than omitting these categories we imputed a NSC labour demand categories by taking the average of the categories which were defined at the finer level.

Second, we estimate the level of employment in each four digit occupation based on the 2016 Census. This enables us to estimate the proportion of the employed workforce in each of the six National Skills Commission’s categories. It also enables us to estimate the proportion of the employed workforce with a VET qualification (that is, diploma or Certificate III or IV) in each labour demand category. The 1, 2 or 3 digit level, but not the 4 digit level.

Third, we estimate the proportion of VET completions (diploma, Certificate III or IV) in each demand category and compare that to the benchmark data from the census. We do this for both completions of persons who had undertaken off the job training as part of an apprenticeship or traineeship and those who were not in this category.

Table 8 presents employment, classified by educational qualification, across the various labour demand categories.

⁴ It would be better to prorate based on the employment level in each 6 digit ANZSCO occupation. However, such data are not available because the 4 digit level is the finest level published from the census.

Table 8: Employment by qualification and Skills Commission labour demand categories, 2016

	Post-graduate	Degree or grad dip or cert	Advanced diploma, Certificate III or IV	Other	Total
Shortage/strong demand	12.8	11.6	11.8	5.3	9.3
Shortage/ moderate demand	7.0	6.8	18.1	6.1	10.1
Shortage/soft demand	0.1	0.1	0.5	0.5	0.4
No shortage/strong demand	38.3	31.7	25.5	26.7	28.3
No shortage/moderate demand	36.6	42.2	30.4	28.8	33.0
No shortage/soft demand	0.6	1.4	2.4	2.6	2.1
Not rated (low skilled?)	4.6	6.2	11.3	30.0	16.8
	100	100	100	100	100

Source: Author's calculations based on the Census of Population and Housing, 2016 and National Skills Commission Priority Occupation list.

We see that, overall, occupations assessed as being in shortage account for around 20 per cent of employment. We also see that the overwhelming proportion of employment is in occupations assessed as having strong or moderate demand with only 2.1 per cent of employment assigned to no shortage/soft future demand categories. In fact the main group of occupations not given a strong or moderate future demand classification is the 'not rated' group – those occupations seen by the National Skills Commission as being of no great interest to skills formation or migration.

We see distinctive patterns by qualification level:

- VET qualifications are more than proportionately represented in occupations assessed as being in current shortage but with only moderate long-term prospects. This most likely reflects trade occupations.
- University qualifications, particularly postgraduate, are well represented in occupations assessed as having strong long-term demand (51.15 per cent of postgraduate employment, 43.3 per cent of degree employment compared to 37.3 per cent of diploma or Certificate III/IV employment and 34.1 per cent of those with no qualification).
- Those with a VET qualification are over represented in the 'not rated' category compared to those with a degree, but under represented compared to those with no post school qualification.

Overall there is a clear skills bias in the National Skills Commission's assessment. The Commission sees strongest demand for those with a postgraduate qualification, followed by those with a degree and then those with a VET qualification at Certificate III or higher. The only note of discord is that there are many occupations assessed as being in current

shortage but only moderate long-term prospects and those with VET qualifications at Certificate III or higher are over represented in these compared to those with degrees.⁵

We now come to the nub of the matter and compare the distribution of VET completions (at Certificate III level or higher) with the employment patterns we have been considering.

Table 9: Distribution of VET completions (at Certificate III level or higher) in 2019 over National Skills Commission labour demand categories

	Number of occupations (4 digit)	Total completions	A&T completions	Non A&T completions	Employment of those with Certificate III/IV or diploma, 2016
Shortage/strong demand	36	9.9	12.5	9.5	11.8
Shortage/ moderate demand	59	12.1	25.7	9.9	18.1
Shortage/soft demand	4	0.2	0.9	0.1	0.5
No shortage/strong demand	120	38.3	27.8	40.0	25.5
No shortage/moderate demand	190	34.5	16.3	37.4	30.4
No shortage/soft demand	17	0.9	0.5	0.9	2.4
Not rated	80	4.1	16.3	2.2	11.3
Total	506	100	100	100	100

Source: Author's calculations based on the VOCSTATS TVA program completions, Census of Population and Housing, 2016 and National Skills Commission Priority Occupation list.

A number of features are worth noting.

First, the pattern of overall completions differs from the distribution of employment (of those with a Certificate III/IV or a diploma). They are underrepresented in the current shortage categories, but overrepresented in the strong future demand category.

Second, the patterns between apprentice and trainee completions and other completions are quite different. The apprentice and trainee completions are skewed toward occupations in current shortage while the non-apprentice and trainee completions are skewed toward occupations assessed as having strong labour demand in coming years. It also seems that the apprentice and trainee completions have a strong element of 'waste' in the sense that 16.8 per cent of them are in occupations assessed as having long-term soft demand or are not rated. This compares with the employment share of 13.7 per cent for persons with a Certificate III/IV or diploma.

In making sense of these patterns, it is worth sounding a couple of notes of caution. We are trying to grapple with the match between the output of VET and the demands of the labour market. First, shortages, especially in the short term, can occur because of features in the

⁵ In the priority list there are 87 occupations assessed as being in current shortage but only moderate future demand. These comprise 3 managerial occupations, 22 professional occupations (mostly medical), 50 trade occupations, and 12 other occupations.

labour market rather than any inadequacies of the VET sector. For example, shortages can occur because current wages and working conditions are such that the occupation is relatively unattractive. For example, hairdressers are perennially assessed as being in shortage but there is no lack of supply. Rather there is high 'churn' in the occupation with individuals having very high labour mobility, preferring not to stay with one employer for a long time. Changes in work culture are more likely to ameliorate shortages rather than an increase in new graduates. Another example is the current difficulties recruiting labour to pick fruit - the difficulties are more about the unattractiveness of the occupation at current wage rates than lack of appropriate training. The second point is that historical employment data can be a little misleading as entry qualification levels change. For example, in earlier decades a diploma was sufficient to enter many professional occupations, but typically a degree is required now. Similarly, caring occupations are becoming more highly credentialed. This means that there will be divergence between the occupations of new graduates and the employment of earlier graduates in the workforce. A third point of caution is that there is not a tight match between the occupation that an individual is trained for and the job that the person gets. Karmel et al 2008 showed that the match is tight in some occupations but quite loose in others. They also argued that much of VET is not vocational in the sense that skills learned in VET could be applied to many occupations (with individuals reporting that they used the skills they learnt in their course despite not working in the matched occupation).

Nevertheless, the matching exercise we have undertaken in which we classify occupations into the National Skills Commission's Priority Occupation List labour demand categories, tends to suggest that there is not a big mismatch between the training and the labour market. It also shows that it seems that the apprentice and traineeship system is more targeted at current shortages (perhaps because of the trade orientation of apprentices) while the broader VET is more aligned with the medium-term labour demand outlook.

5. Final Comments

The purpose of this paper was to look at the state of the non-apprentice and trainee part of VET over the period since COVID-19 impacted on Australia. We were interested particularly in training numbers and the match between the output of the VET sector and labour demand. Governments were very concerned about what happened to apprenticeship numbers as COVID-19 hit and implemented a number of programs aimed at addressing this decline. Our previous analysis suggested this action indeed addressed the decline and that there was no reason to be overly concerned about apprentice (and trainee) numbers. That said, it appeared that trainee numbers had increased in response to the government action and there may well have been an element of waste in this.

The government's action on apprenticeships and traineeships raised the question about the non-apprentice and trainee part of VET where there was apparently little governmental

concern. In fact, apprentices and trainees make up a very small proportion of VET and thus it is important to look at recent trends in this part of VET.

The historical data do indeed raise concerns. We have seen very significant declines in VET activity since 2015 and a further decline as COVID-19 emerged in 2020. Of some comfort, the declines in completions were more muted (that is, much of the decline in student numbers was in those not completing a full qualification).

Of course, it might be the case that this decline in VET activity reflects structural change that was responding to the needs of the labour market. Certainly, university education has been expanding at VET's expense and we have seen degrees become the entry level qualification for many occupations. Technological change also may play a part. For example, diploma level engineers who used to convert designs into workable plans have largely been made redundant by CAD software operated by junior engineers.

To throw some light on the relationship between VET activity and the structure of the labour market we related the output of the VET sector to patterns of employment in the labour market (based on census data) and also to the labour demand categories created by the National Skills Commission for the Priority Occupation List. This analysis was not straightforward because the census data and VET data classify occupations at the 4 digit level while the National Skills Commission's assessments are at the 6 digit level. In looking at VET qualification completions we concentrated on qualifications at the diploma or higher level, and Certificates III and IV. Lower level and non AQF qualifications were assumed to be preparatory in nature and of less relevance to skills formation.

Points to emerge include:

- The output of the non-apprentice and trainee part of VET is very different in occupational terms; Trades are the most important occupation group for apprentices and traineeships while Community and Personal Service Workers are the most important occupation group for the rest of VET.
- The output of the VET sector aligns reasonably well with historical employment patterns evident in the occupational distribution of employed persons with a Certificate III or IV or diploma. One qualification here is that diplomas are less useful as entry level qualifications into the professions than they once were.
- The output of the VET sector aligns reasonably well with the National Skills Commission's assessment of labour market demand. Of some interest is that apprentices and trainees are directed to occupations with current shortages, while the rest of VET is more focused on occupations where labour demand should be strong.

These observations must be treated with some caution because we have not tracked the occupations which new graduates actually get into. Definitive findings on the link between VET output and labour demand would require analysis beyond the scope of this paper.

Our conclusion in looking at the impact of COVID-19 on apprentices and trainees was that governmental response appeared to have addressed any short-term declines in numbers. We are not so sanguine about the rest of VET. First, governments need to pay attention to VET as a whole – apprentices and trainees are a relatively small part of the sector, accounting for around 10 per cent of VET and they are not representative of the sector. Second, numbers have declined significantly, despite the fact that the output of the sector appear to align with the needs of the labour market reasonably well. The evidence is that qualifications being obtained in VET are in the right areas. The impact of COVID-19 may not be that dramatic but this is on top of very significant declines in both government funded and privately funded VET activity since 2015. It should also be noted that the conventional wisdom is that educational participation tends to increase when the economy is bad and therefore, we might have expected the VET numbers to have at least stabilised. Why VET is not maintaining its enrolments must be an issue for overall skill formation.

In this context the contrast between higher VET diplomas and lower level VET certificates needs further exploration. Government now funds relatively low numbers of diplomas; for example in 2020 we saw that there were 73,300 non apprentice/trainee diploma commencements funded by government compared to 343,600 Certificates III and IV. It would appear that Australia's skills formation focuses on degrees in higher education and low skill/intermediate skills in VET. To some extent this may mirror the workforce where we see professional jobs growing and low skilled jobs growing but few working in the intermediate level at the para-professional level. The skilled immigration programs, at least prior to the pandemic, presumably are a substitute for local training in the higher intermediate skills space, and this immigration is likely to reduce the demand for training at that level in Australia. Another characteristic of VET in Australia also does not assist diploma level qualifications with the emphasis on entry level training as embodied by apprenticeships and traineeships as distinct from general education which provides a foundation for lifelong learning. The terminal nature of the majority of diplomas further undermines diploma level study. In this regard, there are no strong pathways between diplomas and degrees – for example a diploma in nursing does not articulate easily into a nursing degree.

Such factors do not support growth in diploma level qualifications. This raises the (rhetorical) question: *Does it matter?* It matters if we believe that VET has a more important role in skills formation than becoming the residual provider of lower level training with a narrow industry focus. This is something that needs policy attention unless we are happy to see VET in genteel decline while the higher education sector swamps the labour market with more and more university graduates.

However, we would need to reconceptualise VET if we are serious about addressing VET's decline. First, VET needs to provide general education, as well as technical training, as the basis for lifelong learning. Second, we need to build pathways such that individuals can progress from certificates to diplomas to degrees. This makes particular sense in certain areas such as community care and health. Such a structure would give VET a strong sense of

purpose rather than being the residual provider of lower skill training. Of course, funding bedevils any reform in this area where funding of VET and higher education seems to be on different planets. Some integration of funding would be essential so that either strong VET providers can teach up to the degree level, or universities incorporate vocational streams. The latter would be a real challenge given universities preoccupation with research, which sits badly with a vocational orientation. The structure of secondary schooling also does not help, with 'academic' education dominating and VET in schools seen as an option only for those who cannot achieve academically.

References

Karmel, T 2021 , The impact of COVID-19 on apprentices and trainees, Mackenzie Research Institute.

Karmel, T, Fieger, P 2012, *The value of completing a VET qualification*, NCVER, Adelaide.

Karmel, T, Mlotkowski, P & Awodeyi, T 2008, *Is VET vocational? The relevance of training to the occupations of vocational education and training graduates*, NCVER, Adelaide.

National Skills Commission 2021, Skills Priority List, June 2021.