

VET in Schools students: characteristics and post-school employment and training experiences

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About the research

VET in Schools students: characteristics and post-school employment and training experiences

Josie Misko, Patrick Korbel and Davinia Blomberg, NCVET

From the mid-1990s there has been an upward trend in student numbers in the VET in Schools (VETiS) program, including a recent rise in certificate III qualifications, with this pattern of steady growth in student numbers changing only slightly in the last few years. To date there has been limited study of the longer-term impact on participants of the VETiS program. As well as considering the longer-term trends in the VET in Schools program, this research looks at VETiS students in 2006 and asks the question: where were they five years later? In 2011, what jobs did they have and were these linked to their training, what other study had they done and is there a correlation between the VETiS program and their life pursuits after five years?

By analysing a new and specially constructed dataset, which links data from the 2006 national VET in Schools Collection to data from the 2011 Census of Population and Housing, we have a platform that assists us to answer some of these questions. Linking these two datasets has provided a large number of observations about the destinations of VETiS students from various demographic, cultural and educational backgrounds, as well as their employment and their further training destinations and experiences.

This unique data linkage has also demonstrated that this methodology has the capacity to provide a robust model for developing rich datasets with the ability to allow a deeper understanding of the outcomes from, and policy implications of programs akin to the VETiS program. The intent is to repeat the exercise with more recent 2016 Census data.

Key messages

- The number of VETiS students has generally trended upwards over the 20-year timeframe, from 60 000 (1996) to over 240 000 (2016), although this pattern of steady growth has changed slightly in recent years. During this time, the proportion of Indigenous students has nearly doubled (3.2% to 6.0%) and we have seen the VETiS participation rate in government schools exceed that of non-government schools students.
- There has been an increase in VETiS apprentices and trainees over the time period, from 13 000 (1996) to just over 17 000 (2016). In 2016 numbers declined from the previous year.
- Certificates II and III were the most common qualifications undertaken in 2015, a change from the 2006–11 period, where certificate I was more popular than certificate III.
- The gap is widening between male and female participation in the VETiS program, with the number of males involved dominating.
- The three most popular fields of education in 2006 for VETiS students were: management and commerce; information technology; and food and hospitality. In 2015 information technology was replaced by society and culture as one of these top three fields of education.
- A key factor enabling this investigation into the labour market and further training destinations of VETiS students was the linking of the 2006 national VET in Schools Collection with data from the 2011 Census of Population and Housing. The linked dataset

was constructed using the principles of deterministic linkage; that is, including in the linked dataset exact matches on responses common to both datasets.

- From the linked set we can see that five years after participating in VETiS programs, of the total group of 2006 VETiS students:
 - 78% were in a job, with 29% of these also studying
 - 9% were studying only
 - 13% were neither working nor studying.
- For a sizeable proportion of the students, especially those in trade-specific pathways, VETiS learning relates to the destination occupations and to the non-school qualifications undertaken following school.
- Sizable proportions of VETiS students go on to undertake and complete further studies, with considerable proportions undertaking these in the same fields as their VETiS studies.
 - In 2011 approximately 70% of the 2006 VETiS students who had undertaken a certificate III or certificate IV in VETiS programs had completed a non-school qualification or were currently engaged in further studies.
 - Of those students who had completed a non-school qualification and had undertaken a VETiS program, a significant percentage of participants had moved on to studies at a higher level:
 - certificate I and II levels: almost 90%
 - certificate III: approximately 40%
 - certificate IV: approximately 58%.
- Around 10% of VETiS students went to university to attain a bachelor degree, thus demonstrating the dual functions of VETiS programs; that is, servicing the needs of the more academically able and interested and those of students who may be less so.

Further work

- Follow-up studies that include control group treatments to enable us to distinguish between VETiS students and non-VETiS students and to track their destinations in the labour market and education will provide us with evidence with which to assess the effectiveness of the VETiS programs more confidently.
- Updating the study by creating another linked dataset, ideally between data from the 2011 national VET in Schools Collection and data from the 2016 Census of Population and Housing will enable us to get more current information on destinations.
- More in-depth matching of intended qualifications and destination occupations (that is, at 4–6 digit ANZSCO level) will also enable us to make more definitive conclusions about the relevance of VETiS programs to employment and further training destinations.
- It would also be extremely useful from a policy perspective to assess the other non-labour market training functions that VETiS may perform in overall school operations, such as providing alternative pathways for specific groups of students in efforts to encourage engagement with education and training.

Dr Craig Fowler,

Managing Director, NCVET

Contents



Tables and figures	6
Executive summary	8
Introduction	16
Background	16
Findings from previous research on VETiS outcomes	17
Recent studies	18
Limitations of this study	19
Organisation of remainder of report	19
Methodology	20
VETiS uptake and participation	24
Qualifications and courses	28
The most frequently used qualifications	31
Overview	35
Employment and training - the linked data study	36
Getting a good job	39
Employment destinations	42
Educational destinations	47
Attaining a Year 12 or higher qualification	47
Completing a non-school qualification or being engaged in further studies	48
Matching fields of education of VETiS course with educational outcomes	49
Conclusions	51
References	56
Appendix A – about the national VETiS Collection	57
Appendix B – ABS data linkage notes	58
Appendix C – most frequently used VETiS training package qualifications, 2006	59
Appendix D – training packages with zero reports for apprentices and trainees	60
Appendix E – training programs and occupations	61
Appendix F – most common destinations for training package programs	62
Appendix G – identifying Year 12 equivalence	63

Tables and figures

Tables

1	Comparisons between original dataset and linked dataset, %	22
2	VETiS students by age group, 2006–16	25
3	VETiS and VET students by field of education, %	30
4	Top three frequently used training package qualifications by number of enrolments, 2016	32
5	School-based apprentices and trainees as proportion of VETiS students by state and territory, 2006–16	33
6	Training packages by school-based apprentices and trainees in VETiS programs	34
7	Percentage of 2006 VETiS students by 2011 census data on education and employment outcomes	36
8	Percentage of all 2006 VETiS students in employment in 2011 by student background characteristics and labour force status	38
9	Percentage of 2006 VETiS students holding a job with good wages in 2011 by student background characteristics	40
10	Percentage of 2006 VETiS students earning incomes of less than and over \$31 200 and \$52 000, 2006–11, by student age characteristics*	41
11	The relationship between intended occupation of 2006 VETiS programs and 2011 occupational destinations, %	44
12	Field of education of 2006 qualification by 2011 employment outcomes, %	45
13	2006 VETiS students who were not in employment, education and training by field of education of VETiS course, %	46
14	Percentage of 2006 VETiS students attaining a Year 12 or above qualification in 2011 by student background characteristics	47
15	Percentage of 2006 VETiS students having attained a non-school qualification or being currently engaged in further studies in 2011 by background characteristics	48
16	2006 field of education of qualification by 2011 further training outcomes, %	50
C1	Frequently used training package qualifications by number of enrolments	59
D1	Training Packages with zero reports for school-based apprentices or trainees	60
E1	Occupations of employment by training packages and non-training package program undertake, %	61
F1	Most common 2011 ANZSCO destination occupations by training package and non-training package programs	62
G1	Derivations of HEAP decision table	63

Figures

1	The number of VETiS students, 1996–2016	24
2	VETiS students by gender, 2006–16	25
3	Indigenous students in VETiS programs, 2006–16	26
4	VETiS participation rate (Years, 10, 11 and 12 students) by Indigenous status, 2006–16	27
5	VETiS participation rate of Years 10, 11, and 12 students by school sector type, 2006–2016	28
6	VETiS students in government-funded training by qualification level of courses, 2006–16	29
7	VET students in government-funded training by qualification level, 2006–16	29



Executive summary

Vocational education programs in schools, called VET in Schools (VETiS), were established with the specific aim of enabling students to undertake both nationally accredited vocational education and training (VET) programs (including part-time apprenticeships and traineeships) alongside programs that enable students to complete their secondary school certificates.¹ VETiS programs lead to accredited VET qualifications.

The effectiveness of such programs is an important policy issue: although we are able to consider the longer-term profiles and trends of the VETiS program and qualifications, as well as the characteristics of the student cohort, what happens to the students after they complete the program and how it supports them in their employment or further studies are of additional interest. To date, there has been little information about the longer-term outcomes of students who have undertaken a VETiS program.

This report seeks to provide insights in two key areas by examining:

- the uptake of VETiS programs since the mid-1990s, with a focus on the quantum and type of programs; the changing enrolment patterns in qualifications; and the characteristics of students
- the further destination of VETiS students, by focusing on the employment and training outcomes five years after their completion of VETiS studies and the extent to which their occupations and further studies relate to their VETiS program.

The uptake of VETiS programs over the last two decades has generally trended upwards, while the diversity of the programs in which students are engaged has broadened. Historically, VETiS students have been mostly engaged in certificate I and II qualifications; however, during the last few years we have seen an increase in certificate III qualifications, suggesting that VETiS is focusing on offering students more specific skills and skills of a higher level than previously.

A key factor in enabling the investigation of the further destinations of VET in Schools students was the construction of a new linked dataset. This was made by linking data from the 2006 national VET in Schools Collection, held by the National Centre for Vocational Education Research (NCVER), to data from 2011 Census of Population and Housing, held by the Australian Bureau of Statistics (ABS). The approach employed during the assembly of the linked dataset was based on deterministic linkage, whereby exact matches on responses for variables common to both datasets are linked. Successful matches were made for over 50% of the in-scope VETiS records, resulting in a substantial sample of students for the analysis.

While there have been previous studies which focused on identifying post-school employment and training for VETiS students and the personal development benefits accruing from participation (Misko & Slack 2004; Polesel, Helme, Davies, Teese, Nicholas & Vickers, 2004; Polesel, Teese, Lamb, Helme, Nicholas & Clark 2005; Black, Polidano &

¹ In 1996 new school-based apprenticeships were introduced into the school-based VET. This often involved students starting a part-time apprenticeship while still at school and receiving payment for that part of the time spent in the workplace.

Tabasso 2011; ABS 2014), many of these studies have been constrained by the use of datasets of small numbers of VETiS students.

This large, linked dataset provided the opportunity to expand the number of data segmentations more finely than had previously been possible.² This meant that we were able to examine the relationship between what students did in their VETiS courses and their post-VETiS employment and further studies. The combination dataset provided the platform for a comprehensive investigation of the actual differences in the employment, income, occupational and further training outcomes of different groups. It also enabled a matching of VETiS training to occupational destinations or further studies in similar fields and the opportunity to demonstrate the relevance of VETiS programs to occupations and further training for participants.

Context

To provide context for the linkage study, a profile of VETiS according to student background characteristics and participation rates for different groups was developed from previous research that investigated the success of VETiS programs and provided trend data. To obtain a more comprehensive analysis of VETiS uptake and offerings, we provide an up-to-date analysis of the national trends in participation, the level and type of qualifications undertaken by students in VETiS programs, and the qualifications that are on offer to meet changing industry and occupational structures.

Enrolments and participation

The research shows that the number of VETiS students has trended steadily upwards over the last two decades. In 1996 (when new approaches to vocational education in schools were being adopted) 60 000 students were undertaking such courses; by 2006 this had increased to around 170 000, and by 2016 the number had increased to just over 243 000. In the last few years the pattern of steady growth has slowed; in 2014 and 2016 the numbers declined from the preceding year. In 2015 numbers had climbed to over 250 000.

The proportion of Indigenous students has doubled across the period, from 3.2% to 6.0%³; their participation rate by comparison with non-Indigenous students is also substantially greater. Participation rates are also substantially higher for students from government schools by comparison with non-government schools (and more so for independent schools).

The number of VETiS apprentices and trainees has increased from 13 000 in 2006 to just over 20 000 in 2015 – a slight drop from 2014 figures; in 2016 numbers stood at just over 17 000. Queensland has the highest numbers. Certificate II qualifications, followed by certificate III, were the most common qualifications undertaken by VETiS students in 2015. Certificate III qualifications experienced an increase from 2010 and a significant increase from 2012, in 2015 accounting for just under 80 000 students compared with 140 000 for certificate II qualifications. Between 2006 and 2011 certificate I qualifications always outnumbered certificate III qualifications as the second most

² The ABS noted that this rate of linkage was lower than that for other education and training data linkages.

³ Over this period of time we note that the proportion of 'not known' Indigenous status has also dropped.

populated qualifications; after that time certificate III qualifications occupied second place. Over the period, however, there was low uptake of certificate IV and diploma qualifications, although some minimal increases have occurred in recent years.

When we compare the qualifications undertaken in post-school VET by comparison with VETiS, we find that the former accounts for substantially higher proportions of certificate III, IV and diploma qualifications, while VETiS accounts for higher numbers of certificates I and II. In 2006 and 2010 the management and commerce field of education (FOE) was the most popular for both VETiS students and VET students in general. In 2015 it was surpassed by society and culture for VETiS and engineering and related technologies for VET. In making these comparisons it is important to note that VET students have a different age distribution from VETiS students. When we compare similar age groups (that is 15 to 19-year-olds) however there is a similar pattern, with post-school VET students more likely to be undertaking certificate III and above qualifications and VETiS students the lower-level certificates.

Employment

A main aim of the VETiS program is to give students a head start in the labour market by providing them with training that combines classroom-based learning with experience in actual or simulated workplaces, but which also enables them to complete their secondary school studies.⁴ We can say that the program has been effective if students get a job when they move into the labour market.

Using the linked dataset, we determined that a significant majority (78%) of the 2006 VETiS participants were in a job in 2011, that is, five years after their studies. Of these, 29% were also studying; 9% were studying only; and the remainder (around 13%) had dropped out of education and were not looking for work (13%). We call this latter group the 'not in employment, education and training' (NEET) group.

It is also clear that students with certain background characteristics seem to be more successful in gaining employment than others. Of those who were employed or looking for work, students who had undertaken diploma and above qualifications, apprenticeship or traineeship programs, and were from catholic and independent schools had a higher success rate.

Indigenous students, those who were predominantly non-English speakers in the home, 19-year-olds and those from other government schools (especially from 'other government providers') had the lowest success rates.

There are some limitations to the observations that must be noted. Not all influencers or characteristics were available in the linked dataset, such as information relating to personal characteristics, including cognitive ability, motivation, parent occupation or business ownership (to facilitate uptake of apprenticeships and traineeships), and family and friendship networks. In addition, the state of the labour market during the period under investigation was not explicitly considered. It is recognised that the labour market or geographical location in which job search is undertaken may also be a contributing factor to success or failure in finding employment.

⁴ For example, in school kitchen facilities for commercial cookery programs or school administration centres for information technology or business services program.

Employment in a trade

The great majority of VETiS students (regardless of background characteristics) do not end up in trade occupations. Nevertheless, of those who do, males are over six times more likely than females to enter the trades.

These findings are supported by our statistical modelling, which indicates that, by comparison with their various counterparts, the most likely groups to end up in trade occupations were males, those who were in an apprenticeship or traineeship, and those who primarily speak English in the home.

Income

The majority of 2006 VETiS students ended up in a job, although the data do not indicate whether they were in a good job (that is, one that earns a good income). We identified what constitutes a 'good job' by changing the cut-off points between a high-paying job and low-paying job. The first cut-off point between a good and a poor-paying job we look at is an income approximating the 2011 minimum wage (\$31 200); the second lifts the bar much higher, to \$52 000. Over three-quarters of all 2006 VETiS students (with the exception of those who were 15 years old in 2006) in full-time employment earned incomes over \$31 200 (this is true for just over two-thirds of the 15-year-olds); however, there were still between 15% and 33% who were earning wages below this income level. Why this was the case is a question for further investigation. When we raised the income bar to over \$52 000, the proportion of workers who earned incomes of this level dropped considerably for all groups across all ages. The great majority (between 70% and 85%) earned less than \$52 000.

The results of our statistical modelling, based on a good income being over \$52 000, show that an income above this level is rare and variability between different groups is also low. By comparison with their counterparts, high incomes of this level are more likely for males, 18 and 19-year-olds, apprentices and trainees and students from outer regional and remote and very remote areas than those from the major cities (presumably because of the better-paying jobs in the resources sector). Although statistically significant, the differences were often slight or minimal however and point to influences that cannot be captured by the linked dataset.

Relationship between 2006 VET courses and destination occupations

When VETiS studies lead to jobs in course-related occupations and or industry sectors it can be said that there is a good alignment between the two. This is an important policy issue, as the key aim of all programs, vocational and general, is to ensure students have the requisite skills and knowledge for a job in their preferred occupation or industry.

We found that a sizable proportion of the 2006 VETiS students (more so for those in the trades than in the non-trades) were in course-related occupations in 2011. That is, their jobs were in the same broad fields or related occupational areas as the intended occupations of their VETiS qualifications. However, no such connections exist in another group of VETiS students, which would suggest that VETiS may be playing a role other than a specific vocational role: VETiS may be acting as a 'try before you buy'

mechanism, with students ultimately deciding that this type of work is not for them – meaning that they do not search for jobs in those areas.

In this study we conclude that the single most common destination (accounting for a quarter of VETiS workers) was technician and trade worker. But if we combine occupations that deal with the provision of services – sales workers, community and personal service workers and clerical and administrative workers – we find that they account (in almost equal proportions) for just under half (48%) of all VETiS students employed in 2011. Labourers, followed by professionals, each account for about a tenth of the VETiS workers, with labourers more common than professionals. Understandably, the smallest groups of VETiS students are found to be employed as managers and machinery operators and drivers, given their lack of experience.

The majority of VETiS students were found in 20 training programs (comprising 19 training package programs and one group of a combination of non-training package programs). All ANZSCO⁵ occupations (at the major group level) were recorded as occupational destinations in varying levels of uptake across students from training and non-training package programs; however, some occupations (mainly managers, professionals, and machinery operators and drivers) were never mentioned as top or runner-up occupational destinations. Labourers are runner-up destinations (but at a much lower level) for a range of trade-specific training package programs.

The most common destination was technician and trade worker. It was the top or runner-up destination for 60% of programs and mentioned among the more frequent occupations in 95% of programs; it was always at the top for trade-specific programs. The top destination for around 32% of the programs, and top or runner-up occupation for 35% of the programs was the sales worker occupation. Just three of the training packages had community and personal service worker as the top destination, but almost half had it as a frequent destination. The top destination for just one of the training packages (the Business Services Training Package) was clerical and administrative worker; however, it figures as a frequent destination for 50% of the programs.

Analysing the most frequent destination occupations by training package undertaken does not really indicate the closeness of the match. This was achieved by considering the most populated training package programs (as well as the combined group of non-training package programs) undertaken in 2006 and the proportion of 2006 VETiS students with jobs in a related destination occupation.⁶ The closest matches between VETiS program and destination occupations were observed to be for the trade-related programs. Between 49% and 63% of students from all trade-specific training packages (with the exception of hairdressing, at 24%) were employed as technician and trade workers. In particular:

- The Electro-Technology Training Package is the highest, with 63% of its 2006 students moving into technician and trade jobs in 2011.
- The Automotive Industry Retail, Service and Repair and the Metal and Engineering training packages have 53% of students moving into technician and trade occupations.

⁵ ANZSCO = Australian and New Zealand Standard Classification of Occupations.

⁶ At ANZSCO major group level.

- The Construction, Plumbing & Services and Integrated Framework and the Furnishing training Packages have about half of their students moving into technician and trade jobs (50% and 49% respectively).

Close matches were less frequent for the Community Services and the Beauty training packages, with 36% and 29%, respectively, of students moving into community and personal service worker jobs. Between 15% and 24% of students from the Retail Services, Information and Communications Technology, Business Services, and Tourism, Travel and Hospitality training packages ended up in closely aligned occupations.

In relation to a lower level of close alignment, it was determined that 34% of students from the Agriculture, Horticulture, and Conservation and Land Management Training Package moved into jobs with some alignment (that is, trade and technician jobs); 22% of hairdressers became community and personal service workers; 13% of information technology students moved into jobs as clerical and administrative workers; and 23% of tourism, travel and hospitality students and 20% of sport, fitness and recreation students moved into jobs as community and personal service workers.

There was no close or near alignment for students from training package programs for screen and media; property services; music; live performance and entertainment; and arts and culture.

VETiS students were employed in all ANZSIC⁷ industry sectors in 2011, with half being employed in four industries: retail trade; accommodation and food services; construction; and health care and social assistance industries, industries not primarily concerned with the making of products or goods but with the sale and provision of goods and services.

Further study of VETiS participants

Being attached to the education and training system following school is considered to be a favourable outcome for any secondary school program, as it opens up pathways to employment, as well as better paying jobs. Of the 2006 VETiS participants who by 2011 had attained a non-school qualification, just over half (54%) had gained a certificate III or IV qualification, 18.2% a VET diploma and another 18.2% a bachelor degree or higher. Just 9.6% had attained a certificate I or II qualification.

Sizable proportions of 2006 VETiS students continued on with further studies and did so in the same broad fields of education. This is also a positive finding and indicates that for some students their VETiS is providing training that is relevant to post-school education pathways.

Almost a fifth of 2006 VETiS students who completed a non-school qualification went on to attain bachelor or higher qualifications. This indicates that VETiS may be catering for two types of students. The first group comprises those with higher academic ability and academic aspirations; the second, those of lower academic ability or academic aspirations. The more academically oriented may be choosing to do VETiS to access specialist facilities and equipment (for example, equipment for developing plastics and polymers, or for constructing 3D printing models, creative arts materials), or because

⁷ ANZSIC = Australian and New Zealand Standard Industrial Classification.

they're interested in entering special vocational pathways. It may also be the case that the availability of articulation pathways between some secondary schools and universities makes it easier for VETiS students to access university studies.

With few exceptions (Indigenous students, and students from remote or very remote locations), well over half (mostly between 57% and 69%) of the students had gained non-school qualifications and were continuing to engage in further studies.

We can use our data to delve more deeply into the extent to which students who go on to further studies undertake studies in the same fields of education as their VETiS programs. When we do this we find that the match rate was best for 56% of students who did studies in Engineering and related technologies; 47% of those who did studies in Architecture and Building, and 40% of those who did studies in Management and Commerce. There was also a match for around 30% of those students who undertook studies in Health; Society and Culture; and Food, Hospitality and Personal Services. Here we also note that the field of education classifications we used are at the broad rather than the narrow or detailed fields of the ASCED⁸ classification.

The increase in the uptake of certificate III qualifications in recent years may be attributable to two factors: firstly, schools wanting to ensure that students have the opportunity to enter the workforce with some higher-level skills, making them more marketable; and, secondly, jurisdictions might be promoting these higher-level courses to enable students to gain more points towards the completion of secondary school studies or to boost university entrance scores.

Certificate III programs are also focused on a wide range of technical programs, contradicting some views that VETiS programs are holding bays for the non-academically able or interested. The fact that students are undertaking programs in areas such as enrolled nursing, health and patient support services, concreting, construction, electro-technology and engineering reinforces the fact that VETiS is providing students with skills relevant to changing labour market structures.

The results of our statistical modelling indicate that in comparison with their respective counterparts, those most likely to attain a non-school qualification or be currently engaged in studies are females, non-Indigenous students, students who mainly speak English in the home, apprentices and trainees, and those students who live in a major city. A certificate III/IV qualification is also more likely to lead to a non-school qualification and engagement in further study than is a diploma or certificate I/II qualification. The type of school attended and the location of the student's usual residence will also have a bearing, with students from non-government schools more likely than those from government schools to achieve at this level, and those from major cities more likely to do so than those from remote or very remote areas.

An uncertain factor is the state of the labour market when students are looking for work, meaning that they take jobs where they can. Furthermore, the findings are a consequence of only considering occupational classifications at the ANZSCO major group level, which may underestimate the relationship. A follow-up study which uses the 4-digit or even 6-digit ANZSCO qualifications may be more informative and may enable us to make finer segmentations.

⁸ ASCED = Australian Standard Classification of Education.

Further research

Our linked dataset connects 2006 VETiS data from the national VET in Schools Collection to data from the 2011 Census of Population and Housing. Use of the latter means that the 2011 employment and training data are dated and may not be a true reflection of the current situation. Repeating the exercise by linking the 2011 data on VETiS to the 2016 census would provide a more up-to-date view of how the labour market operates for 2011 VETiS students.

We have been unable to use the employment and training outcomes for the 2006 VETiS students to make claims about the effectiveness or otherwise of our VETiS programs. This is because we have been unable to source a true control group of students, those who did not do VETiS studies in 2006, or a valid proxy for these non-VETiS students. This gap might be filled in a variety of ways.

- The most productive approach would be to access administrative data on students (both VETiS students and non-VETiS students) from state curriculum authorities (or their equivalents), which capture information on performance in national literacy and numeracy tests (that is, NAPLAN scores), as well as student performance on international tests. In addition, various states also have tracker studies that follow the fortunes of their senior secondary students on leaving school (for example, Queensland and Victoria).
- We might use data from the Longitudinal Surveys of Australian Youth (LSAY), as this source has the capacity to provide us with some good measures on cognitive ability, educational attainment and parental education and occupation.

We looked at occupational destination at the 1-digit level of ANZSCO; further work would benefit from expanding the occupational categories to include specific occupations (perhaps at 4-digit and 6-digit levels of ANZSCO classifications). We also looked at the broad fields of education of programs undertaken by VETiS students. Using the narrow or detailed fields of education (at 4-digit, 6-digit or higher) may enable us to establish with more certainty whether or not there are matches between what students do in their VETiS studies and the further studies they undertake.

A closer investigation of the national VET in Schools Collection to determine the actual qualifications being undertaken by those students who go on to get a bachelor degree will also enable us to understand the interests of these students. Knowing a little more about how their VETiS studies have helped them to acquire these skills will also help us to understand the real impact that VETiS programs have on further education and training decisions.

There is a lack of understanding about what happens to VETiS students once they have completed their VETiS programs.

Introduction

The aim of this research is to provide greater insight into the characteristics of VETiS students, the programs they undertake and the extent to which they move into occupations and further studies related to their VETiS programs. We have used observations from a new dataset which links 2006 data from the national VET in Schools Collection, held by the NCVER, to the 2011 Census of Population and Housing, held by the ABS. The great advantage of this study is that it uses a large dataset, containing a large number of observations, enabling a finer segmentation of the data. This allowed us to investigate whether students' VETiS programs align or are matched to the qualification pathways and occupations they enter or follow post school. Most importantly, the study can inform the way we think of VETiS.

Background

VET in Schools was set up to enable students to undertake both nationally accredited VET programs, leading to accredited VET qualifications, alongside programs which enable them to complete their secondary school certificates or undertake a part-time apprenticeship or traineeship.⁹ However, there is a lack of understanding about what happens to these VETiS students once they have completed their VETiS programs. This is in part because the key national survey of outcomes for VET students, the National Student Outcomes Survey, conducted annually by NCVER, does not have VETiS students in its scope.

Reviews of education and training systems in Australia and elsewhere often occur when economic downturns in the economy have resulted in high levels of unemployment among young people. For example, in 1890 a review of technical education in the state of Victoria¹⁰ also coincided with a time of economic recession and high youth unemployment (Royal Commission of Technical Education in Victoria 1899). Similarly, reforms to vocational education and training in schools in the 1990s (when the National Training Reform Agenda was being implemented across the nation) also coincided with a time of economic recession, which also saw high levels of youth unemployment. The technical education recommended by the 1890 Victorian review included an expansion of manual and practical instruction programs (for example, in woodworking, metalworking, cardboard working, drawing and hand and eye training). Technical education in this period was essentially aimed at exercising the intellect and developing the aptitudes of the student, including 'memory and reasoning', and giving students a general education to prepare them for the 'work of life'. By contrast, the new VETiS programs of the 1990s had a slightly different focus: they were primarily aimed at preparing students for the 'world of work'.

The VETiS programs of the 1990s were also established to offer an alternative pathway to those students not generally interested in or capable of higher academic pursuits and those who were mainly interested in vocational pathways, including training for the

⁹ In 1996 new school-based apprenticeships were introduced into school-based VET. This often involved students starting a part-time apprenticeship while still at school and receiving payment for that part of the time spent in the workplace.

¹⁰ Technical education could be considered to represent a vocational pathway.

trades. In the past and up to the 1980s, many of such students (across Australian states and territories) had often attended junior technical high schools (or their equivalents). The aim of these schools was to make schooling more engaging for students who had been judged as not generally bound for higher academic studies, often based on their results in tests undertaken at the completion of primary school.¹¹ The technical high schools also aimed to develop more practically oriented learning. While the purpose of the VETiS programs established in the 1990s was to enable students to undertake nationally accredited VET programs to prepare them for the world of work or to undertake further studies to lead them to the world of work, today's secondary school students undertake vocational studies alongside their general education studies and use these studies to complete the certificates that signal their completion of secondary school education, as well as any stand-alone VET qualifications. VETiS students are mostly in Years 11 and 12, although there are instances where younger students also participate. The VETiS programs also enable students to undertake part-time apprenticeships and traineeships¹², which can then be converted to full-time programs once students have completed secondary school.

Although vocational studies are offered to secondary school students in Australia under VETiS programs, it is important to note that the focus of VET in Australia is on post-secondary education. In contrast, the focus of VET internationally is mainly on secondary education.

Findings from previous research on VETiS outcomes

Over the last two decades, the good employment and further training outcomes of VETiS students have been regularly acknowledged. Some of the benefits include providing students with opportunities to:

- access workplace training, which helped them to develop self-confidence or to re-engage with school if they were at risk of leaving school early (Polesel et al. 2004)
- acquire skills and experiences to improve their opportunities for part-time work (Polesel et al. 2004)
- make transitions to employment and training pathways. VETiS graduates were more likely than non-VETiS graduates to move into apprenticeships and traineeships, jobs with better career prospects, and further education and training and also more likely to use the VET curriculum to enter university (Polesel, Teese et al. 2005)
- improve their likelihood of school completion (Black, Polidano & Tabasso 2011)
- improve transition to full-time employment, higher weekly income, and the likelihood of finding a job they like in a career they like (Black, Polidano & Tabasso 2011).

One study that questions the effectiveness of VETiS programs is that by Anlezark, Karmel and Ong (2006), which found some positive effects from VETiS for retention from Years 10 to 11 and positive post-school outcomes for Year 11 students but not Year 12 students.

11 Victoria kept its junior technical schools open until the early 1980s, South Australia until the mid-1970s.

12 In many cases these part-time arrangements can be converted to full-time apprenticeships or traineeships on completion of the VETiS program.

Over the last two decades the good employment and further training outcomes of VETiS students have been regularly acknowledged.

They found little relationship between what most students did in VETiS programs and their post-VETiS studies.

Most of the other studies have generally been able to link positive outcomes to VETiS course participation. However, apart from the ABS (2014) analysis (see next section), many of these studies are based on small sample sizes. The value of this present study is its ability to make much finer segmentations due to the larger numbers of observations available from both the national VET in Schools Collection, an administrative collection, and a new dataset that links information from the 2006 VETiS collection with the 2011 Census of Population and Housing. This means that it can, for example, examine in more depth the matches between what students do in the VETiS programs and the occupations in which they work and their further studies.

Recent studies

In 2014 the ABS undertook some basic examinations of the destinations of VETiS students by analysing data from the linked NCVET–census dataset. This study focused on tracking some labour market and further training outcomes for students who were in Year 11 in 2006. The findings, supplemented by data from the Australian Census Longitudinal Dataset (2006–11), showed that VETiS participants were slightly less likely to complete Year 12 than were their non-VETiS counterparts¹³ and that, for both VETiS and non-VETiS students, the Year 12 completion rates were higher for females than for males. Nevertheless, VETiS participation improved school retention to Year 12 for specific groups of students. For example, VETiS participation helped to keep Aboriginal and Torres Strait Islander (ATSI) males engaged with school to Year 12, with 60% staying to Year 12, compared with 43% of ATSI males who did not participate in VETiS. However, this association was not observed for ATSI females.

VETiS participation has an association with positive further education and work engagement outcomes for students who do not go on to university, which is also highlighted by the ABS study. By comparison with their non-university-bound counterparts who did not participate in VETiS in 2006, Year 11 male and female VETiS students had higher engagement with further education or work in 2011 (73% vs 69% for males; 59% vs 56% for females).

The study also showed that students who undertook VETiS in Year 11 in 2006 and did not go on to university were also more likely to be in full-time work in 2011 than were those students who had not been involved in VETiS (67% and 63% respectively). Year 11 boys who had participated in trade-related studies in 2006 were also more likely than those who had participated in non-trade studies to be in full-time work five years later (59% and 54% respectively). In 2011 higher rates of full-time employment were observed for female VETiS students who had studied tourism, office studies, and personal services (46%, 43% and 42% respectively).

¹³ The ABS (2014) notes in footnote (2) that ‘the proportion of students undertaking VET in Schools are calculated as the weighted sum of VET in Schools students (from the 2006 VET in Schools and 2011 Census of Population and Housing integrated dataset) divided by the weighted sum of all equivalent students from the Australian Census Longitudinal Data Set’.

Limitations of this study

The present study can draw on the total number of VETiS students in the national VETiS Collection to make more comprehensive segmentations of participation and activity and access the linked dataset to better understand the relationship between what students do at school and their post-school destinations and activities, but there are some questions it cannot answer.

The study cannot come to any conclusions about whether or not our observations on employment and training outcomes are due to students' participation in VETiS and the learning they have acquired. These limitations are due to the absence of a true control group, comprised of a matched group of students who did not undertake VETiS. A further limitation is that both the national VETiS administrative collection and the Census of Population and Housing lack information on some more direct measures of cognitive ability and educational achievement, which would have enabled us to construct a meaningful proxy for students who have not undertaken VETiS. This information would include performance scores from the National Assessment Program – Literacy and Numeracy (NAPLAN) or from the Program for International Student Assessment (PISA), other measures of cognitive ability, and data on parental educational background or social economic status.

The absence of a true control group poses some limitations.

Organisation of remainder of report

In the report we focus first on the methodology of the research, including the purpose of the study, the key research questions and the construction and composition of the linked dataset. We then describe the uptake of VETiS, including total numbers, participation rates for equity groups and school sector type, qualification level and type, apprenticeships and traineeships (across different training packages), and fields of education. This information for the years 2006 and 2015 is sourced from the NCVER national VET in Schools Collection.¹⁴ Next we report on our analysis of findings from our linked dataset study, first giving details on overall employment and further studies outcomes, followed by a discussion of the relevance of the courses undertaken to occupations and further studies five years down the track. Throughout these sections we also use findings from our statistical modelling to establish whether differences between our key groups of interest are statistically significant. Lastly, we offer some conclusions about the relevance of VETiS to occupational and further studies outcomes and provide some suggestions for further research.

¹⁴ Information prior to this is sourced from historical data, available from the federal government agencies responsible for collecting this information between 1996 and 2005.



Methodology

This study aims to provide a comprehensive account of the VETiS population and the studies they undertake and to investigate whether the content of students' VETiS programs has any association or relevance to the jobs they enter or the further studies they undertake after leaving school.

To do this we investigate descriptive information from national administrative collections held by NCVET, a process that helps us to arrive at a detailed profile of the VETiS student population. We then use a custom-built dataset (linking NCVET data and ABS census data) to investigate the extent to which students' VETiS programs relate to their post-school employment and further training.

Research questions

- What does the VETiS student population profile look like and how does it compare with VET more generally (and especially 15 to 19-year-old post-school VET students)?
- What are the employment, occupation, income and further training destinations for 2006 VETiS students five years after their VETiS studies?
- What is the match between intended VETiS occupations and post-school occupations?
- What is the match between VETiS qualification and post-school qualifications?

Methods

We use three approaches to better understand the nature of the students who undertake VET in Schools programs.

- First, we provide some descriptive statistics on the uptake of VETiS programs¹⁵ according to some basic background characteristics, including age, sex, school affiliation, qualification levels and type, fields of education, Indigenous status, English-speaking background, apprenticeship status and location of usual residence. To do this, we use data from NCVET's national VET in Schools Collection. We also make some comparisons with VET in general, using data from the national VET Provider Collection.
- Second, we use the NCVET VET in Schools dataset in conjunction with the ABS Schools Australia¹⁶ dataset to calculate a participation rate for different groups of students (for example, different age groups, Indigenous students, and students from government and non-government schools). In these cases we use as the denominator the ABS data on the total population of Years 10, 11 and 12 students, as well as the population of students of Indigenous background, and students in the government and non-government school sectors.
- Third, we take information from our linked dataset to provide some descriptive statistics on outcomes for different groups and to draw relationships between VETiS learning areas and post-school employment and further training. We also use

¹⁵ In appendix A we describe the system for the collection of VETiS data.

¹⁶ ABS (2016).

information from the Fair Work Commission to identify minimum wage levels for 2011.

- As a supplementary component of our analysis, we construct some statistical models (namely, logistic regression models) to explain the relationship between 2006 VETiS participation and some 2011 key outcomes for different groups of VETiS students. To do this we take information from our linked dataset, which integrates data from the 2006 VETiS collection and the 2011 census.¹⁷ The VETiS dataset included all persons aged 15 to 19 years old who were enrolled in a VETiS module or unit of competency in 2006 (see appendix A). The scope for the linked dataset is any person in the VETiS dataset who also responded to the 2011 census.

The linked dataset

The linked dataset expands the number of data segmentations available to examine the relationship between what students do in their VETiS courses and their post-VETiS studies and labour market outcomes.

The linked dataset was built by officers from the ABS who applied the principles of ‘deterministic’ linkage to link the two datasets. This meant including in the linked set exact matches on responses for variables common to both sets. These variables were geography (data on postcode, locality code, Statistical Area 2, Statistical Local Area), date of birth, age, sex and country of birth. At a minimum, one geographic match and matches on sex and age or date of birth were required.

Successful matches were made for 84 412 of the 167 088 in-scope VET in Schools records (50.5% of records). This provides a substantial sample of students for analysis, although the ABS team did note that the linkage rate was lower than for other education data linkages they had constructed. The implication of this low match is that some associations and effects may be underrepresented or exaggerated. The groups underrepresented in the linked dataset when compared with the original VETiS dataset were students in remote areas, Indigenous students and students born outside Australia. For example, Indigenous students made up 3.23% of VET in Schools students in 2006, but only 2.79% of the linked dataset.

To address this underrepresentation, weights were calculated for postcode, sex, age, Indigenous status and country of birth. Once the data had been weighted, Indigenous students made up 3.64% of the linked dataset, which is a slight overrepresentation. And individuals who primarily spoke English at home, were born in Australia, resided in a major city and were enrolled with a training organisation from New South Wales were still overrepresented in the linked dataset after weighting. The distribution across sex and age in the weighted linked dataset is consistent with the original dataset.

Table 1 shows comparisons of the composition of various groups in the original dataset, the unweighted linked dataset and the weighted linked dataset. In appendix B we describe the rules for weighting in more detail.

17 <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4260.0.55.001Main+Features12006-2011?OpenDocument>>.

Table 1 Comparisons between original dataset and linked dataset, %

Variable	Category	Percentage in 2006 VET in Schools dataset	Percentage in unweighted linked dataset	Percentage in weighted linked dataset
Sex	Female	49	50	49
	Male	51	50	51
Age	15 years	14	14	14
	16 years	44	44	44
	17 years	34	35	35
	18 years	7	6	7
	19 years	1	1	1
Indigenous status (2006) ^(a)	Indigenous	3	3	4
	Not Indigenous or not known	97	97	96
Language spoken at home (2006)	English	61	68	63
	Other than English or not known	39	32	37
Country of birth (2006)	Australia	32	51	46
	Overseas or not known	68	49	54
Remoteness areas	Major cities	56	66	65
	Inner regional	23	22	22
	Outer regional	17	11	11
	Remote and very remote	5	2	2
State/territory of training organisation	New South Wales	30	36	34
	Victoria	22	15	19
	Queensland	25	27	25
	South Australia	7	6	6
	Western Australia	10	11	10
	Tasmania	2	2	2
	Northern Territory	1	0	1
	Australian Capital Territory	3	3	3

Note: (a) Indigenous status according to the 2006 VET in Schools dataset was used for the weighting, but Indigenous status according to the 2011 Census dataset was used for analysis because it had a lower proportion of 'Not known' students.

The descriptive statistics presented in this section have used the weighting variable calculated by the ABS to weight the sample. The weighted total was 170 011 persons.¹⁸

¹⁸ The logistic regression analyses we use in our statistical modelling do not utilise the weighting variable. This is in accordance with the methodological analysis of Winship and Radbill (1994). As the primary outcome characteristics are mostly binary in nature (that is, either Yes or No), logistic regression analyses were used to determine the effect of student characteristics on outcomes, independent of other student characteristics. We determined the probability of an outcome occurring by following the steps set out in the support document accompanying this report. Our statistical modelling also uses the information about Indigenous status from the 2011 component of the linked dataset.

Statistical analyses: the linked dataset

In presenting our descriptive statistics from our analysis of employment and training destinations of VETiS students, based on the linked dataset, we use the following student demographic and background characteristics. These are also used as points of comparison in our supplementary analysis, which looks at differences between groups more closely:

- demographics
 - sex (male, female)
 - age (15, 16, 17, 18, 19 years)
 - Indigenous status (Indigenous, non-Indigenous)¹⁹
 - language mainly spoken in the home (English, language other than English)²⁰
 - remoteness area (location of usual residence: major city, inner regional, outer regional, remote and very remote)
- level of qualification undertaken (certificate I/II, certificate III/IV, diploma and above)
- involvement in school-based apprenticeship or traineeship (apprenticeship/traineeship, not apprenticeship/traineeship)
- school affiliation (government, catholic, independent, other government providers²¹).

The outcomes we are interested in and the variables we use as dependent variables (in the regression analyses) comprise:

- employment outcomes (whether employed or not employed)
- uptake of trade occupation (whether trade or non-trade)
- income (whether above \$52 000, below \$52 000)
- Year 12 attainment (yes, no)
- further studies completed or being undertaken (highest non-school qualification completed or undertaken (certificates I/II; III/IV; VET diploma; bachelor degree or higher, or currently engaged in further studies).

A discussion of the findings from this supplementary analysis, tables identifying predicted probabilities for different comparison groups, and output from the regression analyses are presented in the support document accompanying this report.

¹⁹ Indigenous status characteristics are derived from the 2011 census because these are more complete. This indicates that 96.1% of students were not Indigenous and 3.9% of are Indigenous.

²⁰ Language mainly spoken at home has also been derived from the 2011 census.

²¹ The category 'other government' in the 'school type' data element includes TAFE institutes, community education providers, private training providers and students enrolled in mixed school types.

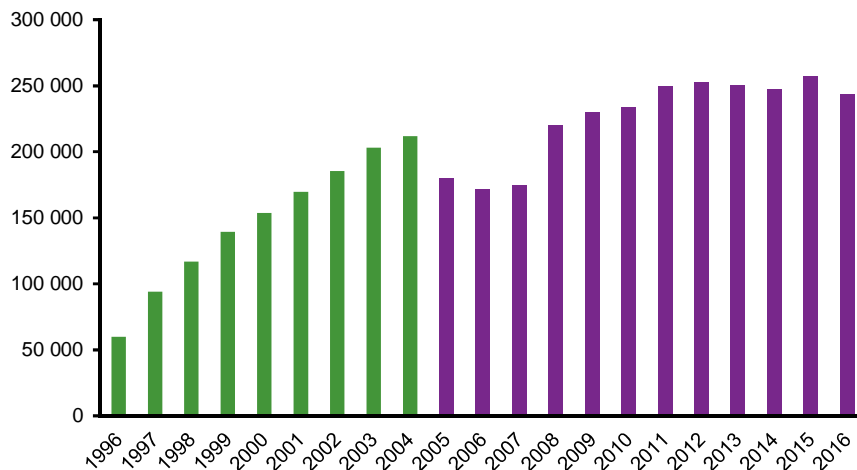
In 1996 there were
60 000 VETiS
students nationwide.



VETiS uptake and participation

The number of students undertaking VETiS has generally increased over the last two decades. In 1996 there were 60 000 VETiS students nationwide; by 2004 this had grown to 211 800 students. By 2015 there were just over 257 000 students in these programs with numbers declining to just over 243 200 students in 2016 (figure 1).

Figure 1 The number of VETiS students, 1996–2016*



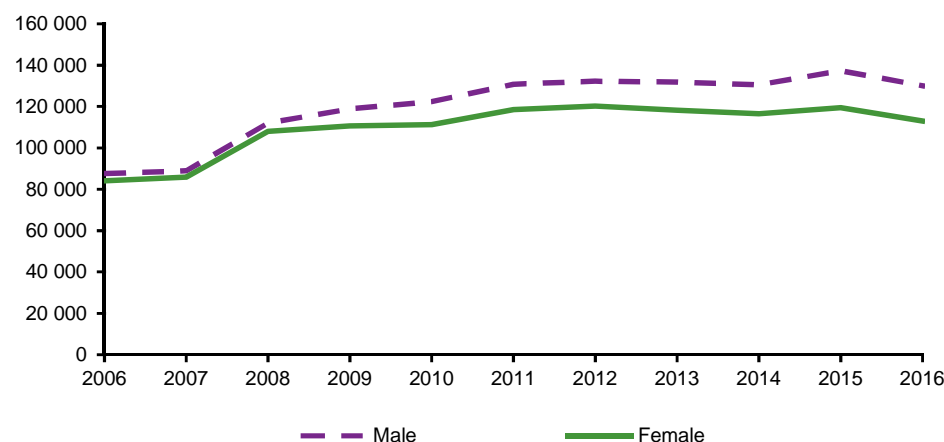
Notes: The data are not comparable between 2004 and 2005. The observed decrease in numbers in 2005 is due to the fact that in 2005 unit record data were being used; before this time data collection methods relied on aggregated data.

* For 2005 activity and onwards, VET in Schools statistics were reported under a new unit record data collection arrangement. As a result of this new arrangement, data are not directly comparable with data reported in previous years. Data on VET in Schools activity from 2006 to 2013 should also not be compared with 2005 VET in Schools activity because of data-quality issues with 2005 data. Differences in colours of the bars indicate differences in collection arrangements from the previous years.

Source: Data from 1996 to 2004 sourced from the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) 2005, National data on participation in VET in Schools Programs and school-based new apprenticeships for the 2004 school year; data 2005–16 is sourced from the NCVET, National VETiS Collection.

Boys are more likely than girls to participate in VETiS, as first identified by Lamb, Long and Malley (1998) using information from the Australian Youth Survey, the precursor to LSAY, and confirmed by data from the current national VET Collection 2006–15 (figure 2). In 2006 boys slightly outnumbered girls; however, the gap has been slowly but steadily increasing. There was a small decline in VETiS participation between 2012 and 2014, with the decline being greater for girls than for boys. By 2016 numbers had decreased for both but there were still just over 17 000 more boys than girls in VETiS.

Figure 2 VETiS students by gender, 2006–16



VETiS students are mostly in the 15 to 19-year-old age group.

Source: National VET in Schools Collection, 2006–16.

VETiS programs are accessible to and taken up a by wide range of age groups. However, in some states the option to engage in VETiS is not open to those below a certain grade level (namely, below Year 10). VETiS students are mostly in the 15 to 19-year-old age group, the predominant age group in senior secondary education. A small group represents the 14 years and under and the 20 years and over age groups. The inclusion of these age groups may signal the operation of policies aimed at reducing the risk of students leaving school early, but expanding opportunities for those in the older age groups who may be undertaking training in senior secondary colleges, which have higher rates of enrolments for older students, or who are availing themselves of the offerings in local schools because of ‘proximity to home’ reasons (figure 3).²²

Table 2 VETiS students by age group, 2006–16

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
14 years and under	2 248	3 160	8 690	10 068	10 321	10 196	8 133	8 559	8 042	8 616	7 624
15 to 19 years	167 075	169 340	208 632	216 677	220 917	236 376	242 312	239 734	236 589	246 497	233 707
20 years and over	2 313	2 271	2 562	2 562	2 503	2 789	2 148	2 020	2 508	1 984	1 942
Not known	21	23	71	168	80	19	15	6	15	4	6

Source: National VET in Schools Collection, 2006–16.

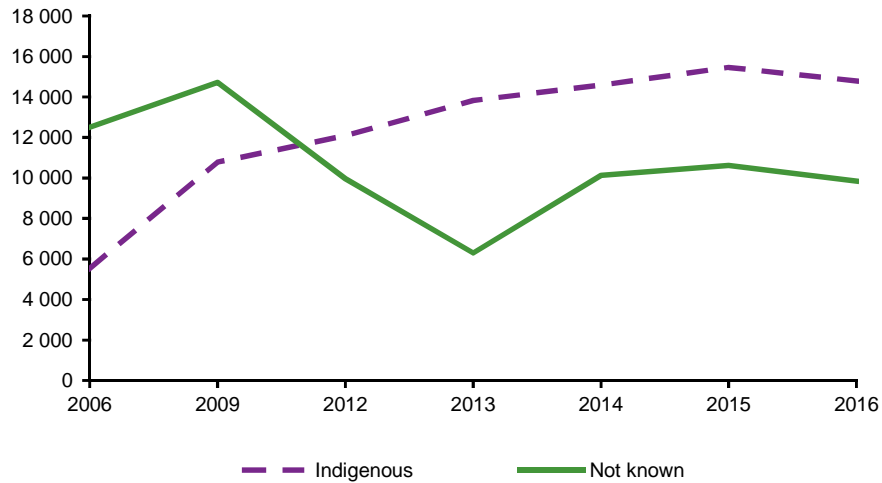
The number of VETiS students who identify as Indigenous has also increased. There were around 5500 Indigenous students in VETiS programs in 2006 (representing 3.2% of the total); this had increased to around 15 000 by 2016 (representing 6.1% of the total, and an increase of almost 170%). The result is a reflection of the increasing involvement of Indigenous students in VET overall. Despite a glitch experienced in 2010 and 2011, when

22 A study of VETiS in Tasmania conducted before 2006 (when our present analysis starts) by the then Office of Post-Compulsory Education (2004) found that adults, as well as school-age students, attended VETiS programs in their local schools or skill centres. Adults mainly chose to undertake VETiS programs in local schools or skill centres because training was easy to access, close to their home or place of work, and they did not have to travel long distances to attend training (cited in Johns et al. 2004).

The number of VETiS students who identify as Indigenous has increased.

a large number of students did not report their Indigenous or non-Indigenous status, the quality of the data seems to be improving. There were around 12 500 records with unknown Indigenous status in 2006, decreasing to around 10 600 in 2015 and 2016.²³ Here we just identify Indigenous status and not known records to give a better indication of Indigenous participation in VETiS.

Figure 3 Indigenous students in VETiS programs, 2006–15*



Note: *Data for 2010 and 2011 are not included because of quality issues with 'unknown data'.
Source: National VET in Schools Collection, 2006–16.

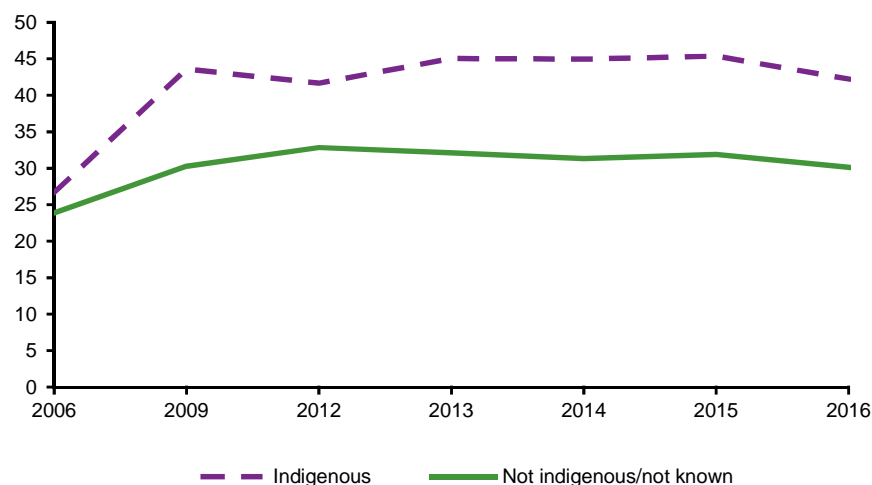
By comparison there were just over 153 600 non-Indigenous VETiS students in 2006; by 2016 there had been a 42% increase; however, numbers of non-Indigenous students had dropped by almost 12 500 from 2015.

We can also look at the participation rate of Indigenous students in VETiS programs by calculating a percentage of all Indigenous students in Years 10, 11 and 12 reported for these years by the ABS.²⁴

23 Some of the increase in Indigenous participation we have seen may be the result of improvements in the quality of the data, with a decrease in the number of unknown Indigenous status.

24 These data, taken from ABS (2017) combine the 'not Indigenous' with 'not known' data and subtract from this total data for Indigenous students. We do this because the ABS only reports data for Indigenous students.

Figure 4 VETiS participation rate (Years, 10, 11 and 12 students) by Indigenous status, 2006–15, %*



Students from the government sector are far more likely to be engaged in VETiS than students from the non-government sector.

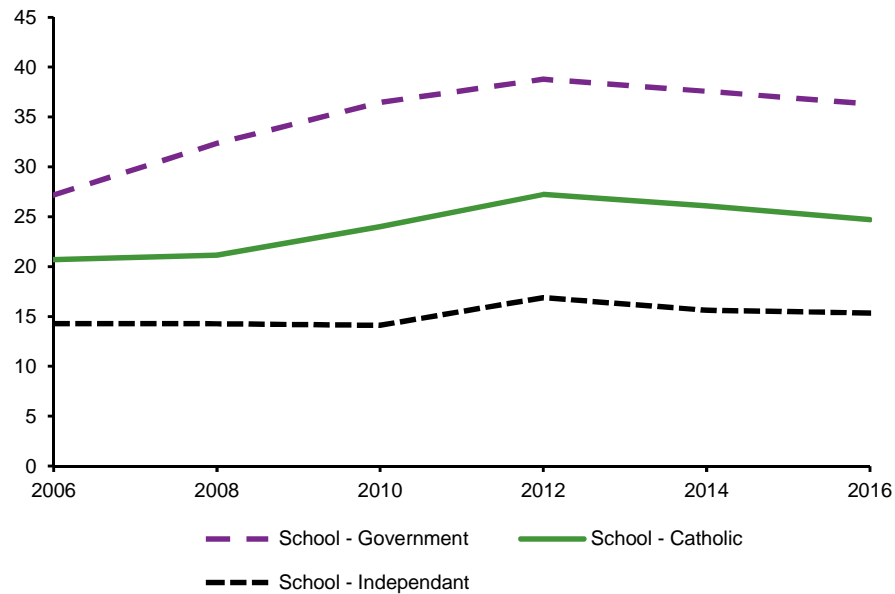
Note: *Data for 2010 and 2011 are not included because of quality issues with 'unknown data'.
Source: National VET in Schools Collection, 2006—16; ABS (2017).

Students from the government sector are far more likely to be engaged in VETiS than students from the non-government sector. We use information from the ABS²⁵ to calculate the participation rate of VETiS students in different sectors (figure 5). We find that this participation rate increased relatively steadily between 2008 and 2012, after which it started to plateau for both government schools and catholic schools: in 2014 it was 38% for government schools and 26% for catholic schools. By 2016 this had declined slightly for both these sectors to 36% and 25% respectively. By contrast, growth for independent schools has been flat and relatively stable: in 2014 it stood at 16%, far lower than for both government and catholic schools, and by 2016 it had declined to 15% (a differential of 21 and 10 percentage points respectively).

25 The ABS data do not have an 'other' segment as does the national VETiS Collection. To deal with this we use the total number of Years 10, 11, and 12 students for each of the sectors.

The greatest proportion of VETiS students were enrolled in certificate I and II qualifications, but mostly in certificate II qualifications.

Figure 5 VETiS participation rate of Years 10, 11, and 12 students by school sector type, 2006–2016, %



Source: National VET in Schools Collection, 2006–16; ABS (2016).

Qualifications and courses

Between 2006 and 2011 the greatest proportion of VETiS students were enrolled in certificate I and II qualifications, but mostly in certificate II qualifications. Between 2012 and 2014, however, we see an increase in the proportions taking up certificate III qualifications and a slow decline in the proportion enrolling in certificate II and certificate I qualifications. There were very low levels of uptake in certificate IV and diploma qualifications and ‘other’ qualifications (namely, VET statements of attainment and subject-only qualifications). In 2015 the majority of VETiS students were undertaking courses at certificate II level, followed by those at certificate III level (figure 6).

Figure 6 VETiS students in government-funded training by qualification level of courses, 2006–16

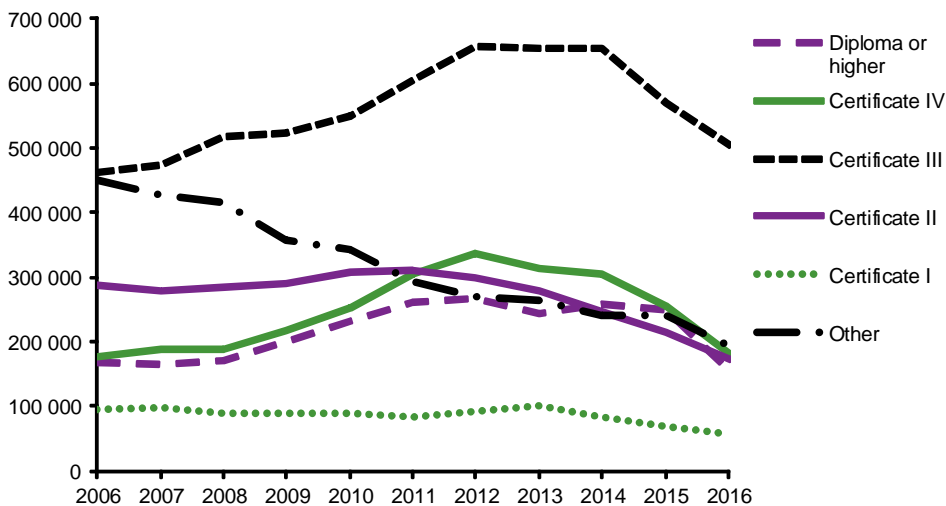


Post-school VET is predominantly at the certificate III level.

Source: National VET in Schools Collection, 2006–16.

How does the VETiS pattern of qualifications compare with that of VET more broadly? The answer to this question will enable us to understand any differences and similarities between the two groups, and whether or not VETiS targets only the lower-level qualifications, which are generally easier to resource and deliver, leaving the higher-level qualifications to post-school VET. We find that post-school VET is predominantly at the certificate III level (figure 7).

Figure 7 VET students in government-funded training by qualification level, 2006–16



Source: National VET Provider Collection, 2006–16.

In general, comparing VETiS students with VET students in general ignores the fact that the two groups have different age distributions; we therefore compare the qualifications undertaken by our VETiS students with those undertaken by 15 to 19-year-olds post school.

The three most popular fields of education in 2016 were society and culture, management and commerce, and food, hospitality and personal services.

We find that VETiS students are more likely to be undertaking certificate I and II qualifications and far less likely to be undertaking certificate III and above qualifications and ‘other’ qualifications. In 2015 (NCVER 2015) we find that, by comparison with post-school VET students in the 15 to 19-year age group, the VETiS group was less likely to be undertaking:

- certificate III qualifications (31.6% VETiS vs 41.3% VET)
- certificate IV qualifications (1.5% VETiS vs 7.3% VET)
- diploma or higher qualifications (1.6% VETiS vs 8.2% VET)
- ‘other’ qualifications and courses (0.7% VETiS vs 8.0% VET).

They were more likely to be undertaking:

- certificate II qualifications (54.9% VETiS vs 30.9% VET)
- certificate I qualifications (9.7% VETiS vs 4.2% VET).

Field of education

For VETiS students the three most popular fields of education in 2016 were society and culture²⁶, management and commerce, and food, hospitality and personal services. For VET in general these were engineering and related technologies, followed by management and commerce, and society and culture (table 3).

Table 3 VETiS and VET students by field of education, %

	2006		2010		2016	
	VETiS	VET	VETiS	VET	VETiS	VET
08 Management and commerce	28.3	21.2	32.1	21.7	17.2	14.3
11 Food, hospitality and personal services	20.0	9.2	17.3	9.5	15.8	8.5
02 Information technology	14.8	3.8	1.5	1.8	7.0	1.7
03 Engineering and related technologies	11.0	17.0	10.9	17.6	10.3	16.5
12 Mixed field programmes	6.2	11.2	9.2	10.0	8.5	9.0
10 Creative arts	5.4	3.2	8.1	3.4	7.8	1.9
04 Architecture and building	5.0	6.4	6.7	7.6	8.4	9.0
09 Society and culture	4.9	11.4	8.0	12.5	17.5	12.2
05 Agriculture, environmental and related studies	3.6	4.9	3.6	4.1	3.6	3.6
06 Health	0.6	2.8	2.3	4.0	3.2	4.3
07 Education	0.1	2.0	0.1	2.7	0.4	5.5
01 Natural and physical sciences	0.1	0.4	0.2	0.4	0.5	0.6
No field of education			0.4			
Not known		6.6		4.6		12.8
Total	171 657	1 636 904	233 821	1 772 598	243 279	1 265 648

Source: National VET in Schools Collection, 2006–16, National VET Provider Collection 2006–16.

Notes: VET activity refers to post-school VET.

From 2016, all fee-for-service activity (including that delivered by TAFE and other government providers) has been excluded from the scope of government-funded activity, so that Government-funded students and courses now only reports Commonwealth and state/territory government-funded training activity. The new scope has been backdated to 2003 in all NCVER resources. Fee-for-service activity from TAFE and other government, adult and community education and other registered training providers is reported in the Total VET students and courses 2016 publication.

²⁶ This field includes the narrow fields of ‘health and welfare’ and ‘sports and recreation’, which include areas like children’s services, and sport and fitness and personal training.

For 15 to 19-year-old VETiS students the most popular fields of education in 2015 were:

- society and culture, followed by management and commerce and food, hospitality and personal services (17.5%, 16.8% and 15.9% of the share respectively)
- engineering and related technologies, which accounted for 10.7% of the share. For VET in general the two most popular fields of education were engineering and related technologies (17.3%) and food, hospitality and personal services (16.6%). Management and commerce came in at a close third (accounting for 14.9% of the share).

The two most populated qualifications are Certificate II in Business and Certificate II in Hospitality both recording just under 13 000 students.

The most frequently used qualifications

Looking at enrolments by field of education gives us a sense of the broad fields of learning in which students are engaged but not much about the specific types of qualifications undertaken. To shed more light on the types of qualifications VETiS students undertake in these broad fields of education we examine the list of training package qualifications for 2015 and create some domains (which may combine a number of training package areas). We then identify for each qualification in these domains their number of enrolments. We then remove from this list those qualifications in which the number of enrolments is relatively small. From this reduced list we take the three most populated qualifications for each domain. In doing so we can see that the two most populated qualifications are Certificate II in Business and Certificate II in Hospitality, both recording just under 13 000 students, followed by Certificate II in Kitchen Operations, with just over 10 000 students. These are followed by Certificate III in Construction Pathways, with almost 8000 students, and Certificate III in Sport Fitness and Recreation, with 7930 students (table 4).

The profile of the most populated qualifications has only changed slightly from 2006 (see appendix C). At that time the most populated training package qualification was also the Certificate II in Business (with a total of 23 555 students); it was also followed by hospitality qualifications (namely the Certificate II in Hospitality Operations, with a total of 23 500 students); the third most populated was the Certificate II in Information Technology, with 11 736 students.

Table 4 Top three frequently used training package qualifications by number of enrolments, 2015

Domain	Highest number	Second Highest number	Third highest number
Agriculture, horticulture and conservation and land management, racing, animal studies	<i>Cert. II Agriculture N=3045</i>	<i>Cert. II Animal Studies N=1869</i>	<i>Cert. II Rural Operations N=1427</i>
Automotive	<i>Cert. II Automotive Vocational Preparation, N=2737</i>	<i>Cert. II Automotive Servicing and Technology, N=1127</i>	<i>Cert. III Light Vehicle Mechanic, N=512</i>
Arts and culture	<i>Cert. II Visual Arts N=2938</i>	<i>Cert. III Visual Arts N=1204</i>	<i>Cert. III Design Fundamentals N=692</i>
Beauty, nails and hairdressing	<i>Cert. II Retail Makeup and Skin care N=2189</i>	<i>Cert. II Hairdressing N=2161</i>	<i>Cert. III Beauty services N=1305</i>
Business management and financial services	<i>Cert. II Business N=12881</i>	<i>Cert. III Business N=4861</i>	<i>Cert. I Business N=2083</i>
Community services and children's services	<i>Cert. III in Early Childhood Education N=4575</i>	<i>Cert. II Community Services N=3642</i>	<i>Cert. II Active Volunteering N=1819</i>
Construction and plumbing	<i>Cert. II Construction Pathways N=7997</i>	<i>Cert. I Construction N=4426</i>	<i>Cert. III Carpentry N=1140</i>
Electro-technology	<i>Cert. III Electro-technology (electrician) N=328</i>	<i>Cert. III Electro-technology (air conditioning and refrigeration) N=37</i>	
Engineering and aero skills	<i>Cert. II Engineering Pathways N=3238</i>	<i>Cert. I Engineering N= 2318</i>	<i>Cert. II Engineering N=998</i>
Furnishing, furniture making, upholstery, interior decorating	<i>Cert. II Furniture Making N=1456</i>	<i>Cert. I Furnishing N=1287</i>	<i>Cert. III Cabinet Making N=96</i>
Health	<i>Cert. II in Health Support Services, N=1082</i>	<i>Cert. II in Emergency Medical Service First response, N=25</i>	<i>Cert. III Aboriginal and Torres Strait Islander Primary Health Care , N=15</i>
Hospitality & tourism	<i>Cert. II Hospitality N=12 683</i>	<i>Cert. II Kitchen Operations N=10 352</i>	<i>Cert. III Catering Operations N= 5437</i>
Information and communications technology	<i>Cert. II Information, Digital Media and Technology N=6382</i>	<i>Cert. I Information, Digital Media and Technology N=5872</i>	<i>Cert. III Information, Digital Media and Technology – N=5704</i>
Live production theatre and events	<i>Cert. III Live Production and Services N=2217</i>	<i>Cert. II in Dance N= 894</i>	<i>Cert. III Live Production Theatre and Events N=471</i>
Music	<i>Cert. III Music N=1802</i>	<i>Cert. II in Music N=1389</i>	<i>Cert. II Technical Production N=1108</i>
Retail	<i>Cert. II Retail Services N=4958</i>	<i>Cert. III Retail Operations N=2213</i>	<i>Cert. II Community Pharmacy N=87, Cert. 1 Retail Services N=87</i>
Screen and media	<i>Cert. III Media N=3240</i>	<i>Cert. II Creative Industries Media N=1401</i>	<i>Cert. I Creative Industries N=232</i>
Sport, fitness and recreation	<i>Cert. III in Sport and Recreation N=7930</i>	<i>Cert. III in Fitness N=6572</i>	<i>Cert. II Sport and Recreation N=4768</i>

Source: National VET in Schools Collection, 2006–16.

School-based apprenticeships and traineeships

One of the key policy shifts of the last two decades has been the introduction of school-based part-time apprenticeships and traineeships and the acceptance of these arrangements for delivery in secondary schools. In 1998 there were 1591 school students in school-based apprenticeships and traineeships in Australia; by 2008 this had risen to 25 727 students. In 2015 it dropped to 20 093 students and continued to decline the following year. In 2016 there were 17198 students programs. Low numbers in the early days were often related to industrial issues, which saw some industry sectors and in some states balk at the idea of part-time apprenticeships and traineeships. Notably, in

2016 just over half of all the school-based apprentices and trainees in Australia were in Queensland. This proportion increased from just under a third in 2006.

Apprentices and trainees in 2006, 2010 and 2015 were enrolled across the great majority of training package programs; however, in 2006 school-based apprentices and trainees were observed in all training packages except 15; in 2010 there were just eight packages with no school-based apprentices and trainees; in 2015 there were 12 (see appendix D).

If we take apprentices and trainees as a proportion of VETiS students across Australia and in each state and territory, we find that in 2006 Victoria had the highest ratio of apprentices and trainees to VETiS students, but in 2016 Tasmania had the highest proportion (albeit with a low number of students); in 2016 Western Australia had the lowest ratio (table 5).

Table 5 School-based apprentices and trainees as proportion of VETiS students by state and territory, 2006–16

State and territory	2006	2010	2016
Tasmania	4.7	19.3	18.2
Queensland	9.7	10.9	10.8
South Australia	4.7	6.2	9.4
Northern Territory	7.1	4.3	3.3
Victoria	14.4	7.4	6.5
Australian Capital Territory	1.5	10.1	6.5
New South Wales	3.2	4.1	4.3
Western Australia	4.4	3.6	2.1
Australia	7.5	7.4	7.1

Source: National VET in Schools Collection, 2006–16.

In 2016 the largest proportions of school-based apprentices and trainees were enrolled in the Retail Services Training Packages (accounting for 16.0%) followed by the Tourism, Travel and Hospitality Training Packages²⁷ (accounting for 14.3%), and by the Business Services Training Packages (accounting for 12.6%). These three training packages (in the same order of frequency) also accounted for the highest proportions of all school-based apprentices in 2006 and 2010. Where the Retail Services Training Packages accounted for around a third of all school-based apprentices and trainees in 2006, this had dropped by 14.1 percentage points in 2010 and continued to decline in 2016. By contrast, the Tourism, Travel and Hospitality Training Packages accounted for the second largest proportion (14.3%) of apprentices and trainees in 2006; this declined by 1.8 percentage points in 2010, but picked up and returned to 2006 figures in 2016. The next highest shares of apprentices and trainees in 2006 are accounted for by the Business Services Training Package, where the figures dipped in 2010 only to pick up slightly in 2016. (table 6).

However, the most movement is observed in the Sport, Fitness and Recreation Training Packages, where they occupied tenth place in 2006 (accounting for 2.4% of apprentices and trainees). They had climbed to fourth place in 2010 and 2016 (accounting for 7.9% and 8.8% of apprentices and trainees respectively).

²⁷ We use the plural form here and in ensuing descriptions because there are a number of Training Packages for this particular sector that we include for each.

Table 6 Training packages by school-based apprentices and trainees in VETiS programs

	2006	2010	2016
SIR – Retail Services (SIR, WRP, WRR, WRW)	33.4	19.3	16.0
SIT – Tourism, Travel and Hospitality (SIT, THH, THC, THT)	14.3	12.5	14.3
BSB – Business Services (BSA, BSB)	13.6	12.2	12.6
ICT – Information and Communications Technology (ICA, ICT)	5.5	4.3	3.2
AUR – Automotive Industry Retail, Service and Repair (AUR)	5.1	6.0	4.3
AHC – Agriculture, Horticulture and Conservation and Land Management (AGE, AGR, AHC, RTD, RTE, RTF, RUA, RUH)	5.0	4.5	5.5
MEM – Metal and Engineering (MEM)	3.4	4.4	2.4
CPC – Construction, Plumbing & Services Integrated Framework (BCF, BCG, BCP, CPC)	3.3	7.3	6.8
CHC – Community Services (CHC)	3.1	4.7	8.6
SIS – Sport, Fitness and Recreation (SIS, SRC, SRF, SRO, SRS)	2.4	7.9	8.8
SHB – Hairdressing (SHB, SIH, WRH)	1.4	3.2	3.1
SIB – Beauty (SIB, WRB)	1.2	0.7	0.3
CUF – Screen and Media (CUF)	0.9	1.0	0.8
MSF – Furnishing (LMF, MSF)	0.7	1.0	1.0
CUA – Live Performance and Entertainment (CUA, CUE, CUV)	0.6	0.6	0.6
AMP – Australian Meat Industry (AMP, MTM)	0.5	0.5	0.8
TLI – Transport and Logistics (TDT, TLI)	0.5	0.9	1.4
UEE – Electrotechnology (UEE, UTE, UTL)	0.4	2.0	1.9
CUS – Music (CUS)	0.4	0.2	0.1
FDI – Food Processing Industry (FDI)	0.3	0.4	1.4
ACM – Animal Care and Management (ACM, RUV)	0.3	1.0	0.8
HLT – Health (HLT)	0.2	1.9	2.6
CPP – Property Services (CPP, PRD, PRM, PRS)	0.2	0.1	0.2
PMB – Plastics, Rubber and Cablemaking (PMB)	0.1	0.0	0.0
All other Training Packages and Courses	3.4	3.2	2.5
	100.0	100.0	100.0
Total numbers of apprentices and trainees	12 925	17 368	17 198

Source: National VET in Schools Collection 2006–2016

Looking at the proportion of school-based apprenticeships and traineeships in VETiS programs enables us to get a view of the quantum of secondary school students in contracts of training, but this does not tell us much about which training packages support the largest proportions of school-based apprentices and trainees. In 2006 half of the program enrolments in the Retail Services Training Package were for school-based apprentices and trainees, while for the Automotive, Industry, Retail, Services and Repair Training Packages it was about a fifth. These two training packages in 2006 accounted for 4312 and 665 school-based apprentices and trainees respectively. There were other training packages whose proportions of school-based apprentices and trainees were greater than these two but they represented substantially smaller numbers of individuals. For example, around three-quarters of the enrolments in the Library, Information and Cultural Services and the Australian Meat Industry Training Packages were for school-based apprentices and trainees but this accounted for just 16 and 65 individuals respectively.

Overview

Thus far we have looked at a review of the literature on VETiS (which has given us some mixed results about the effectiveness of VETiS programs), the uptake of VETiS programs over time, and the profile of VETiS students in terms of demographic characteristics and school sector background. We have investigated the level of qualifications they undertake, as well as the most frequently used qualifications, in terms of broad fields of education and specific qualification titles. We have also looked at the engagement of VETiS students in part-time apprenticeships and traineeships across jurisdictions, and training package type. This has given us a comprehensive and up-to-date picture of VETiS uptake and participation.

In the next section we take information from our linked dataset to investigate the 2011 employment, income and further educational experiences of students who participated in a VETiS program in 2006.

In 2011, almost 80% of 2006 VETiS students found themselves in a job; a fifth of students were not employed.



Employment and training – the linked data study

The 2011 labour force status of students who undertook a VETiS program in 2006 is reported in table 7. This indicates that in 2011 almost 80% of 2006 VETiS students found themselves in a job; a fifth were not employed. We cannot make any claims about the effectiveness of the VETiS program in leading people to employment but we note that about a fifth of the general population of 20 to 24-year-olds was also not in employment in 2011. Of those VETiS students who were working, almost a quarter were working in a trade occupation. In addition, just over a fifth of these 2006 students were both working and studying in 2011. Less than a tenth was studying only, while the remainder were working but not studying. In terms of educational attainment, almost 90% had attained a Year 12 qualification or higher, while just over an eighth had completed a qualification at lower than a Year 12 level. Of those with a non-school qualification, just over half had attained a certificate III or IV qualification, just under a fifth had attained a VET diploma and about the same proportion a bachelor degree or higher. Around a tenth had achieved a certificate I or II qualification. Of the 30% or so who were studying five years after their 2006 VETiS training, two-thirds were undertaking university studies, with the remainder in VET studies. In a later section of the report we will see that, of those completing a non-school qualification, there are substantial proportions acquiring higher-level qualifications, especially those at the sub-diploma level, than their VETiS qualifications.

Table 7 Percentage of 2006 VETiS students by 2011 census data on education and employment outcomes

Labour force status	%
Employed	78.8
Not employed	21.2
Occupation (of those currently working)	
Trade	23.1
Non-trade	76.9
Study and employment status	
Not in study/not employed	12.6
Not in study / employed	55.6
In study/not employed	9.0
In study/employed	22.6
Year 12 attainment status	
Lower than Year 12	13.0
Year 12 or higher	87.0
Highest non-school qualification for those with a non-school qualification	
Bachelor degree or higher	18.2
VET diploma	18.2
Certificate III/IV	54.1
Certificate I/II	9.6
Current institution of studies	
University	20.8
VET	9.3
Not in studies	69.8
Total number	170 011

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

The linked dataset has enabled us to obtain information about the destinations of VETiS as a total group. If occupations and further training are identified as being in the same area as the VETiS course, then we can conclude that prima facie VETiS is relevant to the jobs that people get and the further studies they undertake.

Getting a job

Preparing students for the world of work is a major aim of VET in general, with a key indicator of success being the capacity of students to gain employment. In part, this also holds for VETiS programs, although students in these programs are also expected to undertake studies to complete their senior secondary school certificates.

Weighted data in the linked datasets are used to investigate outcomes for the 170 011 VETiS students, of whom 49% were female and 51% were male.

- Around four-fifths of all 2006 VETiS male and female students were employed in 2011, with males accounting for a slightly greater proportion. Just over 90% of both males and females who were in work or looking for work (that is, in the labour force) had found a job; however, females were slightly in the majority. We note that for 2011 the unemployment rate for 20 to 24-year-olds in the general population was 8.9%.
- Around 80% of all 2006 VETiS students in the 15, 16 and 17-year age groups were in employment, while just three-quarters of 18-year-olds were in employment. These proportions are substantially greater than those for 19-year-olds, where just over two-thirds find themselves in employment. When we look only at those in the labour force, we find that around 90% of all age groups are in a job, with 19-year-olds being the least likely to be in a job, although we need to take account of the fact that there are small proportions of 19-year-olds in the dataset and they may have quite different personal characteristics from the other students.
- Around four-fifths of all 2006 VETiS students from different levels of study had found employment in 2011, with those undertaking diploma and above showing higher levels of employment than those who had undertaken lower-level qualifications. Around 90% of those from all qualification levels in the labour force were employed, with higher proportions of workers among diploma holders.
- Around four-fifths of all 2006 VETiS apprentices and trainees, as well as non-apprentices and trainees (with a slightly greater proportion of apprentices and trainees), were in employment; this increases to just over 90% for those in the labour force.
- About 80% of all 2006 VETiS students who were not Indigenous and students who mainly spoke English in the home were employed; this rises to just over 90% for those in the labour force.
- Far lower proportions of all 2006 VETiS Indigenous students (just over 60%), and 2006 VETiS students who mainly spoke a language other than English in the home (just under 70%) were employed; this climbs to around 85% for those from these groups in the labour force.
- Around 80% of all 2006 VETiS students across school sector types were in a job, although slightly higher proportions of students from non-government schools than

Around four-fifths of all 2006 VETiS male and female students were employed in 2011, with males accounting for a slightly greater proportion.

those from government schools were in a job. When we take only those in the labour force, these figures increase to just over 90% for both non-government and government schools, with non-government school students slightly more likely to be in work.

- Where almost 80% of all 2006 VETiS students from major cities and regional locations were employed in 2011, the same was true for just under three-quarters of 2006 VETiS students from remote and very remote locations. For those in the labour force, just over 90% of students from all areas were in a job, with those in the major cities being slightly behind the others. In table 8 we set out the percentage of 2006 VETiS students who found themselves in employment in 2011.

Table 8 Percentage of all 2006 VETiS students in employment in 2011 by student background characteristics and labour force status*

2006 student characteristics	Total group	Labour force only
Sex	%	
Males	80	91
Females	77	93
Age		
15 years	78	91
16 years	79	91
17 years	80	92
18 years	76	92
19 years	67	88
Level of VETiS study		
Cert. I/II	79	92
Cert. III/IV	80	92
Diploma and above	85	96
Apprenticeship status		
Apprenticeship	83	93
Not apprenticeship	79	92
Language mainly spoken in the home		
English	81	92
Language other than English	68	88
School type		
Government	78	91
Catholic	82	93
Independent	81	93
Other government	69	87
Indigenous status^(a)		
Non-Indigenous	79	92
Indigenous	62	83
Location		
Major city	79	91
Inner regional	79	92
Outer regional	79	92
Remote and very remote	74	92
Total number	170 011	170 011

Note: *Weighted data

(a) Female students from Indigenous backgrounds outperformed males (85.1% and 81.1% respectively).

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

Getting a good job

A key indicator of success of any training program aiming to prepare students for the world of work is whether or not students find themselves in a job following the completion of their course or program. The fact of having a job however gives no indication of its quality. We use information from the ABS Survey of Average Weekly Earnings to fill this gap.

We denote a 'good wage' in two ways. First, we use a more conservative approach and identify a good wage as being \$31 200 and above (a cut-off point close to the minimum national wage).²⁸ Second, we use a more progressive approach and identify a good wage as being \$52 000 or more, which is considerably more than the national minimum wage and roughly represents the average salary for 2011. We find that over two-thirds of VETiS students, irrespective of their background characteristics, are earning wages of \$31 200 and above. When we raise the cut-off point to \$52 000 and over, we find that the proportion of VETiS students earning such wages drops considerably (table 9).

Over two-thirds of VETiS students were earning wages of \$31 200 and above.

At \$52 000 and over, the proportion of VETiS students earning such wages dropped considerably.

²⁸ The 2011 wage set by the Fair Work Commission for a worker who works full-time for a specific amount of hours per week.

Table 9 Percentage of 2006 VETiS students holding a job with good wages in 2011 by student background characteristics*

2006 student characteristics	Income bracket = \$31 200 and over	Income bracket = \$52 000 and over
Sex	%	%
Males	76	23
Females	77	13
Age		
15 years	67	15
16 years	75	16
17 years	80	22
18 years	81	24
19 years	85	30
Level of VETiS study		
Cert. I/II	76	19
Cert. III/IV	77	21
Diploma and above	81	13
Apprenticeship status		
Apprenticeship	81	22
Not apprenticeship	76	19
Language mainly spoken in the home		
English	77	19
Language other than English	72	15
School sector		
Government	75	18
Catholic	78	20
Independent	78	22
Other government	75	22
Indigenous status^(a)		
Non-Indigenous	76	19
Indigenous	73	19
Location		
Major city	76	18
Inner regional	76	19
Outer regional	77	22
Remote and very remote	78	34
Total number	170 011	170 011

Note: *Weighted data.

(a) Around 73% of Indigenous males and females earn incomes of \$31 200 and above, while 23.3% of Indigenous males compared with 12.7% of Indigenous females earn incomes of \$51 200 and above.

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

If we look more closely at the incomes for each of the different age groups (noting that in 2011 students from VETiS programs will be five years older than they were in 2006), we find, as expected, that the proportion of full-time workers on less than \$31 200 progressively and steadily decreases with advancing age; at 24 years of age just 15% of these 2006 students are earning wages that are at low levels and below \$31 200. For those in the high-income group (that is, earning \$31 200 and above), the proportions also progressively and steadily increase with advancing age; at age 24 years 85% of 2006 VETiS workers are in this high-income bracket (understandable, given that young workers normally earn higher incomes with increasing experience). Between 15% and 33% are earning incomes below this level. As this table (table 10) only includes those in full-time work this is a strange result. It could be that some may not have completed their

apprenticeships and traineeships and although they were in full-time work they might still be receiving a training wage; alternatively, they might underreport their income. The ABS provides some explanation or suggestions for the underestimation of income.²⁹

We could argue that having a cut-off point between high and low income at \$31 200 is too conservative to denote a good wage, and that most workers even in their initial years would earn at least \$31 000 or more.³⁰ When we raise the income bar and consider as low incomes those below \$52 000 and as high incomes those at \$52 000 and above, we get a different perspective. We find that, for our 2006 VETiS group, just over four in five 20-year-olds are earning incomes of less than \$52 000 in 2011. Incomes of less than \$52 000 for the different age groups tend to progressively decrease with advancing age. At 20 years the proportion of 2006 VETiS workers earning less than \$52 000 stands at 84.6%; it decreases around 15 percentage points for those who are 24 years of age. Correspondingly, incomes of more than \$52 000 increase with advancing age. At 20 years 15.4% of our 2006 VETiS students earn these salaries. At 24 years of age around a third of our 2006 VETiS students are earning such incomes. Notably, there is little difference between males and females at the minimum wage level or above (that is, \$31 200 and above), but males pull ahead at the \$52 000 and above level.

Just over four in five 20-year-olds were earning incomes of less than \$52 000 in 2011.

Table 10 Percentage of 2006 VETiS students earning incomes of less than and over \$31 200 and \$52 000, 2006–11, by student age characteristics*

Age in 2006	Age in 2011	Less than \$31 200	\$31 200 and over	Less than \$52 000	\$52 000 and over
15 years	20 years	33.0	67.0	84.6	15.4
16 years	21 years	26.0	74.0	83.7	16.3
17 years	22 years	20.0	80.0	78.1	21.9
18 years	23 years	19.0	81.0	76.5	23.5
19 years	24 years	15.0	85.0	70.3	29.7

Note: *Weighted data.

One of the key limitations of our study is that we do not have a control group to make any claims about the effectiveness or otherwise of the VETiS program. During the course of the study we considered the construction of an appropriate proxy but the lack of information enabling us to identify non-VETiS students made this exercise impossible for the current study. However this is a key question for further research.

29 <<http://www.abs.gov.au/websitedbs/censushome.nsf/home/factsheetsuid?opendocument&navpos=450>>.

30 This is the amount of income earned by a full-time worker in 2011.

9% of VETiS students were not employed but were engaged in further studies.

12.6% were not employed or undertaking any studies.



Employment destinations

Next we look at the 2011 destination occupations of 2006 VETiS students to better understand the alignment of occupations to the courses undertaken in VETiS programs. If we find a close alignment between the two, then it enables us to say that VETiS has a clear vocational role. If there is no alignment or limited alignment, then we would need to question the usefulness of VETiS by comparison with general education.

When we investigate the employment outcomes of VETiS students, we find that, although 9% of the total group were not employed, they were engaged in further studies. Another 12.6% were not employed or undertaking any studies. Together these equate to 21.6% of individuals not in employment.

Industry and occupational destinations

In 2011 VETiS students from 2006 were employed across all industry sectors, with almost half (49%) employed in four industry sectors: retail trade; accommodation and food services; construction; and health care and social assistance. The retail trade industry accounted for higher proportions of workers than either of the other sectors. The next largest group (accounting for another 14% of workers) was employed in manufacturing and other services industries.³¹ Together, all of these industries account for almost two-thirds of the 2006 VETiS group in employment in 2011. The remainder of VETiS workers are sparsely dotted among the rest of the sectors. Interestingly, if we combine retail and wholesale industries with accommodation and food services, we find that these VETiS groups end up in sectors whose key functions are in selling and delivering products and services.

In this part of the analysis we investigate whether the occupational learning our 2006 VETiS group acquired in their VETiS programs aligns with the broad skills associated with their destination occupations.

We use the ANZSCO groupings to track the occupational destinations of those 2006 VETiS students who were employed in 2011. The largest single group (almost a quarter) were employed as technicians or trade workers, followed by sales workers (16%), clerical and administrative workers (16%) and community and personal service workers (16%). If we combine these service workers, they account for almost half of the total group, a result that leads us to consider whether more students should be made aware of such offerings in VETiS. Labourers and professionals accounted for about similar proportions (10% and 8.7% respectively); managers and machinery operators and drivers also each accounted for similar proportions (around 5%), with machinery operator and drivers being the smaller group.

³¹ The ABS reports that this ANZSIC sector comprises personal services; religious, civic, professional and other interest group services; selected repair and maintenance activities; and private households employing staff, for example, 'providing a range of personal care services, such as hair, beauty, diet and weight management services; providing death care services; promoting or administering religious events or activities; or promoting and defending the interests of their members'
<<http://www.abs.gov.au/ausstats/abs@.nsf/0/14074305CC4FA750CA25711F00146E4A?opendocument>>.

This information does not take into account the specific VET programs that students undertook at school in 2006. When we look more closely at the programs undertaken, we find that the great majority of students (98.4%) had undertaken studies in 20 VETiS programs (comprising 19 training package programs and a combined group of programs not connected to any training package). We do not include all training packages in which enrolments and outcomes are observed because some of them have very small numbers of participants, and the results would therefore be less meaningful.

We take the 2011 occupational destinations (at ANZSCO major group level) of 2006 VETiS students and compare these with the intended occupations of the training package qualifications undertaken (see appendix E). We find that, with rare exceptions (where the numbers fall below 10), students from the different training package programs can be found across all levels of the ANZSCO major group of occupations. When we investigate this issue further, it becomes clear that the most common destination occupation for many of the training packages, including the combined group of non-training packages, is that of technician and trade worker. These are followed by a smaller group of training packages where sales worker, community and personal service worker, and clerical and administrative worker occupations are more common. There are few training packages which align with destination jobs in labouring or professional occupations, and even fewer aligning with manager and machinery operator and driver occupations.

Ranking the destination occupations for each of the training packages (see appendix F), as well as the combined group of non-training package programs, shows how 2006 VETiS students are distributed in jobs across the major occupational groupings. However, it does not tell us about the extent of the alignment and whether it is in close, near and far alignment to the intended occupation of the VETiS training package qualification undertaken.

To undertake this analysis we take the proportion of students from different training package programs and use the following rule of thumb to make these classifications. When a student has undertaken an obvious trade-related training package (say electro-technology) and ends up as a trade and technician worker, then we say that they have ended up in an occupation that is in close alignment. However, we are limited somewhat in this as we have only the ANZSCO major group (that is, level 1) data. This means we cannot tell whether this student actually ends up in an electro-technology occupation or whether the student ends up in another trade or technical job. However, the closeness comes from the fact that training for a trade is associated with a trade or technician occupation. Table 11 sets out the specific programs undertaken by VETiS students in 2006 and reports on the closeness of the alignment between the intended and destination occupations.

The most common destination occupation for many of the training packages, including the combined group of non-training packages, was that of technician and trade worker.

Table 11 The relationship between intended occupation of 2006 VETiS programs and 2011 occupational destinations, %

Training package and non-training package programs	Close	Near	Far	Total	Technician and trade workers
Agriculture, horticulture and conservation and land management		34	66	100	34
Arts and culture			100	100	12
Automotive industry retail, service and repair	53		57	100	53
Beauty	29		71	100	11
Business services	24		76	100	14
Community services	36		73	100	7
Construction, plumbing & services integrated framework	50		50	100	50
Electro-technology	63		47	100	63
Furnishing	49		51	100	49
Hairdressing	24	22	54	100	24
Information and communications technology	24	13	63	100	24
Live performance and entertainment			100	100	17
Metal and engineering	53		57	100	53
Music			100	100	19
Property services			100	100	14
Retail services	22		78	100	13
Screen and media			100	100	20
Sport, fitness and recreation	20		80	100	26
Tourism, travel and hospitality	15	23	62	100	15
Non-training package				100	31

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

We can see that the closest match between VETiS and destination occupations (at broad occupational levels) are for the trade-related occupations, with the Electro-technology Training Package being in close alignment with destination occupations for the highest proportion of students. This is followed by training packages for automotive industry retail, service and repair; metal and engineering; construction, plumbing & services integrated framework; furnishing; and community services. For the great majority of training packages there is limited or no alignment at this major group level. Does this mean that VETiS has no vocational role?

The answer to this question is not straightforward, as quite clearly it plays a vocational role for those who end up in jobs that are closely aligned to the intended occupations of the training packages they undertake, although it may play less of a role for the others. For the latter, VETiS may be playing a different role, similar to general education. It is preparing them for the broad world of work rather than for a specific occupation. In addition, an analysis of occupations at the 4- or 6-digit level might better help us to get a better understanding of the actual jobs that people end up in, an issue for further study. The proportion of students who move into specific ANZSCO destinations at major group level is reported in appendix E).

Field of education and employment outcomes

We can also segment our data according to the field of education of the program undertaken and the extent to which the 2006 VETiS students who undertook these studies are employed five years down the track. (This is not to draw any causal relationship between the two as we do not have a comparison group of non-VETiS students to enable us to make such claims.) When we look more closely at the employment experiences of VETiS students by the field of education courses they had undertaken in 2006, we find that the great majority of 2006 students across the FOEs were employed. Higher levels of employment (accounting for over four-fifths of students) were associated with trade-related FOEs (that is, engineering and related technologies and architecture and building). However, around three-quarters of all students across all FOEs (with the exception of education, where it was 70%) were also employed.

Between 11% and 18% of VETiS students across the fields of education are found to be NEET.

Table 12 Field of education of 2006 qualification by 2011 employment outcomes, %

	Employed	Not employed but looking for work	Not in employment and not looking for work	Total VETiS students
Natural and physical sciences	74	na	na	100
Information technology	76	9	15	100
Engineering and related technologies	84	7	9	100
Architecture and building	85	7	9	100
Agriculture, environmental and related studies	78	7	15	100
Health	76	8	15	100
Education	70	7	22	100
Management and commerce	79	7	14	100
Society and culture	80	7	14	100
Creative arts	78	8	14	100
Food, hospitality and personal services	79	6	15	100
Mixed field programmes	73	na	na	100
Total	79	7	14	100

Note: Data in cells marked na were not available due to ABS confidentiality restrictions.

Note: Percentages are reported to the nearest whole number. Rounding can lead to situations where the number in the body of a given table might not add to a rounded total.

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

Table 12 includes those 2006 VETiS students who in 2011 were employed, not employed and looking for work, and not employed and not looking for work. This could include those individuals who were not employed but not looking for work because they were studying but not working. We can remove these individuals to get a better understanding of how many individuals were not in employment, not in training and not looking for work. In recent times this group has been known by the acronym NEET. Here we find that between 11% and 18% of VETiS students across the fields of education are found to be NEET (table 13). Students who had studied mixed field programs had the highest rates of NEET, followed by those who had studied health, and agriculture, environmental and

related studies. The mixed field programs for 2006 VETiS students included qualifications in community services work, work preparation (community services), and community services (first point of contact). Health programs included qualifications in areas like animal studies and animal services, occupational health and safety, health support services, emergency first response programs, non-emergency patient support, first aid, Aboriginal and Torres Strait Islander primary health care, dental assisting, and other allied health assistance services. Agriculture, environmental and related studies included areas such as conservation and land management, agrifood, horticulture, parks and gardens, retail nursery, shearing, wool handling, dairy production, landscaping, turf management, and Indigenous land management.

Table 13 2006 VETiS students who were not in employment, education and training by field of education of VETiS course, %

	Not in employment education or training (NEET)
Natural and physical sciences	na
Information technology	12
Engineering and related technologies	11
Architecture and building	11
Agriculture, environmental and related studies	15
Health	16
Education	na
Management and commerce	13
Society and culture	12
Creative arts	12
Food, hospitality and personal services	13
Mixed field programmes	18

Note: Data in cells marked na were not available due to ABS confidentiality restrictions.



Educational destinations

Turning our attention to educational outcomes we investigate the extent to which 2006 VETiS students had completed a Year 12 or above qualification by 2011. We find that by 2011 just over four-fifths of 20 to 24-year-old VETiS students reported having completed a Year 12 or equivalent qualification as their highest secondary school qualification.

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Attaining a Year 12 or higher qualification³²

By 2011 the great majority of VETiS students had completed a Year 12 or higher qualification. In fact between 84% and 92% of VETiS students from all but four of the different groups in our study had done so. Although considerably lower proportions of these latter groups (comprising students from other government schools, Indigenous backgrounds, outer regional and remote and very remote locations) had attained such qualifications, nevertheless, three-quarters of them from each of these groups had done so. Indigenous students recorded the lowest proportions with such qualifications (table 14).

Table 14 Percentage of 2006 VETiS students attaining a Year 12 or above qualification in 2011 by student background characteristics*

2006 student characteristics			
Sex	%	Language mainly spoken in the home	%
Males	85	English	87
Females	89	Language other than English	88
Age		School sector	
15 years	84	Government	85
16 years	86	Catholic	91
17 years	90	Independent	92
18 years	88	Other government	74
19 years	84	Indigenous status	
Level of VETiS study		Non-Indigenous	88
Cert. I/II	86	Indigenous	72
Cert. III/IV	91	Location	
Diploma and above	88	Major city	88
Apprenticeship status		Inner regional	86
Apprenticeship	89	Outer regional	77
Not apprenticeship	87	Remote and very remote	76
Total number			
170 011			

Note: * Weighted data.

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

³² These include Year 12, VET certificates III and IV, and VET and higher education diplomas and above (see appendix G for the decision table for determining what non-school qualifications are considered to be equivalent to year 12; these are the VET certificate III qualifications).

Females were more likely than males to have attained a non-school qualification or be involved in further studies.

Completing a non-school qualification or being engaged in further studies

Having completed a non-school qualification or being currently engaged in further studies can also be considered as favourable outcomes for all students. Both indicate that students have remained attached to the training system to undertake or complete a non-school qualification, thereby giving them the greatest possibility of obtaining a job or a good job.

By 2011 over half (54%) of our 2006 VETiS students who had completed a non-school qualification had acquired a non-school qualification at the certificate III or IV level. Almost a fifth (18%) had attained a bachelor or higher degree, and the same proportion had attained a diploma qualification. Just a small proportion (10%) had attained qualifications at certificate I or II levels.

With a few exceptions well over half of 2006 VETiS students (between 57% and 69%) had attained a non-school qualification or were engaged in further studies (table 15). Females were more likely than males to have done so, and higher proportions of students from non-government schools than government schools had achieved these outcomes. The most prolific group, with around three-quarters of their 2006 VETiS students attaining a non-school qualification or being engaged in further studies, were independent schools, followed by catholic schools. The least prolific groups in this regard were students from remote and very remote areas and students from Indigenous backgrounds (around 40% of these groups). Female Indigenous students were more likely than males to have attained a non-school qualification or be engaged in further studies (42.1% and 36.1% respectively).

Those who had undertaken certificate I and II qualifications were substantially less likely than those who had undertaken certificate III, IV qualifications or diploma or higher qualifications to have attained a non-school qualification.

Table 15 Percentage of 2006 VETiS students having attained a non-school qualification or being currently engaged in further studies in 2011 by background characteristics*

2006 student characteristics			
Sex		Language mainly spoken in the home	
Males	59	English	60
Females	64	Language other than English	69
Age		School sector	
15 years	60	Government	58
16 years	61	Catholic	69
17 years	63	Independent	74
18 years	61	Other government	59
19 years	62	Indigenous status	
Level of VETiS study		Non-Indigenous	62
Cert. I/II	60	Indigenous	39
Cert. III/IV	68	Location	
Diploma and above	59 ^(b)	Major city	63
Apprenticeship status		Inner regional	60
Apprenticeship	64	Outer regional	57
Not apprenticeship	61	Remote and very remote	46
Total number 1 700 111			

Note: * Weighted data

- (a) Female Indigenous students were more likely than males to have a non-school qualification or be engaged in further studies (42.1% and 36.1% respectively).
- (b) There are only 350 students who were in the diploma and above category so this may account for unusual results with respect to this group.

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

There are only 350 students who were in the diploma and above category so this may account for unusual results with respect to this group.

Matching fields of education of VETiS course with educational outcomes

We can also investigate the extent to which the field of education of the VETiS qualification is associated with completion of Year 12 or further qualifications. We find that in 2011 over 80% of all 2006 VETiS students across all fields of education had attained at least a Year 12 or higher qualification. The highest proportions (around 90% of students) to do so were VETiS students from creative arts; food, hospitality and personal services; information technology; natural and physical sciences; and management and commerce.

When we look more closely at these further study outcomes, we find that of the 2006 VETiS students who had undertaken courses in natural and physical sciences and had completed a non-school qualification, just over a third had attained a bachelor or higher qualification by 2011. This was also the case for around a quarter of those who had undertaken information technology and creative arts courses and around a fifth of those who had undertaken management and commerce and food, hospitality and personal services. The lowest proportions of students who had completed a non-school qualification and had completed bachelor or higher degree programs by 2011 were students who in 2006 had undertaken studies typically covering the trade occupations (for example, engineering and related technologies and architecture and building). This is not surprising, as those undertaking trade qualifications are more likely to acquire a VET qualification than a higher education qualification.

When we look at the extent to which 2006 VETiS students completing a non-school qualification by 2011 had undertaken a non-school qualification in the same field, we find that the highest matches are for those who had undertaken courses in engineering and related technologies, architecture and building and management and commerce (table 16). The lowest proportions of these were for those who had undertaken courses in society and culture, food hospitality and personal services and health. This could mean that students who had undertaken VETiS programs in these areas used them to gauge whether or not they liked these studies, consequently deciding not to pursue them; it might also mean that our analysis considering field of education classifications at the broad field level (2-digit level of ASCED) has not been able to capture finer relationships; they might indeed exist if we were to consider classifications at the narrow fields (at the 4-digit level) or detailed classifications (at the 6-digit or above level). This is another area for further investigation. Notably, information on students who undertook certain field of education programs is not available due to confidentiality reasons because of the small numbers of students; these programs include the natural and physical sciences, information technology, agriculture, environmental and related studies, and education.

Table 16 2006 field of education of qualification by 2011 further training outcomes, %

	Proportion who attained at least Year 12	Proportion of those who did a non-school qualification and attained a bachelor or higher qualifications	Proportion of those who did a non-school qualification and completed it in the same field
Natural and physical sciences	89	34	na
Information technology	90	24	na
Engineering and related technologies	83	5	56
Architecture and building	82	6	47
Agriculture, environmental and related studies	84	8	na
Health	83	9	26
Education	83	14	na
Management and commerce	88	22	40
Society and culture	87	17	28
Creative arts	90	25	na
Food, hospitality and personal services	88	19	29
Mixed field programmes	81	15	na

Note: Data in cells marked na were not available due to ABS confidentiality restrictions.

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

We can also interrogate the data to understand whether VETiS students go onto higher qualification levels following school. We find that substantial proportions of those who completed a non-school qualification after school (especially at the certificate I to IV levels) had improved their qualifications. For example:

- Around 90% of certificate I and II students had completed a non-school qualification at least to the certificate III level (91% and 89%, respectively), with 19% of certificate II students doing so at the diploma level and 19% of them doing so at the bachelor degree level.
- 42% of certificate III students and 58% of certificate IV students had done so at least to the diploma level.

In addition, 14% of diploma students who had completed a non-school qualification did so at least to the bachelor degree level.



Conclusions

There were two major aims to this study. The first was to provide some descriptive information on the uptake of VETiS programs since the mid-1990s, the quantum and type of programs undertaken and the characteristics of students who participate in these programs. The second was to investigate the labour market and further training destinations of VETiS students and to identify alignment between the students' VETiS studies and the types of occupations or further courses undertaken five years after these studies. We did this by using a dataset which links data from the 2006 VET in Schools Collection, maintained by NCVET, to data from the 2011 Census of Population and Housing, maintained by the ABS.^{33,34} The linking of the VETiS and ABS data allowed a deeper investigation into the longer-term outcomes of VETiS participants, not previously available through separate analyses of each dataset. It also provided us with a much larger set of observations than might be available from other longitudinal datasets (namely, the LSAY dataset, also held by NCVET). The creation of this new dataset enabled us to make finer segmentations of the data and to improve our understanding of how we think of VET in Schools and the extent to which it is associated with movement into jobs, good jobs and further training for participating students. We use the concept of 'association' to underscore the fact that we cannot speak about the effectiveness of VETiS programs per se because we lack data on the status of a comparison group of those 2006 students who did not undertake a VETiS program.

Uptake and participation

Our findings show that the uptake of these VETiS programs has been increasing over the last two decades, stabilising around the 250 000 mark in the last few years; there was a slight dip in numbers in 2016. Participation rates are higher for males, for Indigenous students by comparison with non-Indigenous students, and for students from government schools by comparison with students from non-government schools. Where VETiS students are more likely to be undertaking certificate I and II qualifications (mainly certificate II qualifications), post-school VET students in the 15 to 19-year age group are more likely to be undertaking certificate III and higher qualifications. During the last few years, however, we see an increase in the uptake of certificate III qualifications by VETiS students. Certificate II in Business, followed by Certificate II in Hospitality Operations and Certificate II in Retail Operations were the three most populated qualifications in VETiS in 2006. This profile has only slightly changed in 2015. Certificate II in Business, followed by Certificate II in Hospitality Operations, is still the most populated qualification. However, where Certificate II in Information Technology came in third place in 2006, third place in 2015 was taken by Certificate II in Kitchen Operations, followed by Certificate II in Construction Pathways, and close behind this Certificate III in Sport and Recreation. The increased uptake of certificate III qualifications noticed in

The increased uptake of certificate III qualifications noticed in recent years may signal the intention of state curriculum authorities to concentrate on higher-level skill qualifications for the completion of secondary school certificates.

³³ The linking and administration of the new linked dataset is managed by the ABS.

³⁴ It also shows how a successful collaboration can allow non-ABS researchers to access the ABS data while maintaining the privacy of participants and upholding data access laws, as specified in the ABS Act. In addition it enables us to look at a large dataset to determine the extent to which students obtain successful outcomes from a certain type of program.

For some groups of students, VETiS may be acting as a 'try before you buy' mechanism.

recent years may signal the intention of state curriculum authorities to concentrate on higher-level skill qualifications for the completion of secondary school certificates.

Employment and training

The findings from our linked data study show that the great majority (just under 80%) of 2006 VETiS students found themselves in a job in 2011 with 29% of these also studying. Of those not in work 9% were studying without working, and around 13% were not working, not looking for work and not studying.

Students from key minority groups (namely, Indigenous and non-English speaking backgrounds) and students from government schools (including 'other government providers') fared less well. This suggests that VETiS programs do not eliminate the effects of social and economic disadvantage. This is a difficult task for both VETiS and general education to deal with. However, considering the higher participation rates of students from these backgrounds in VETiS programs, it is important that the teachers and vocational education coordinators working with such students become aware of any major training-related educational or personal problems being experienced by these students. Being aware of these issues enables the better customisation of the training and workplace experience to student needs.

Relevance of VETiS to destination occupations

A sizable proportion of 2006 VETiS students were in course-related occupations; that is, their jobs were in the same broad fields or related occupational areas as the intended occupations of the qualifications undertaken. This is especially the case for those students who undertook trade-specific training, where over half of the students intending to move into trade occupations did move into trade and technician occupations after school. Considerable proportions (but substantially lower than for the trades) of students undertaking non-trade-specific VETiS also ended up in occupations related to their intended occupations. This is also a positive finding.

However, in another group of VETiS students the connections between the intended occupations of their VETiS studies and the actual jobs attained seem to be unrelated or non-existent. This would suggest that VETiS may be playing a role other than being specifically vocational. VETiS may be acting as a 'try before you buy' mechanism, with students deciding that this type of work is not for them, meaning that they decide not look for jobs in those areas. The state of the labour market itself will also affect the jobs young workers accept when they are looking for work. In a poor labour market young people may take jobs where they can, regardless of the training pursued in their VETiS studies.

Our findings however are a consequence of our considering occupational classifications only at the major group level and we cannot ignore this fact. The approach may have underestimated for some and overestimated for others the extent to which there is a relationship between the intended occupation of the VETiS qualifications and the actual jobs attained; it may also underestimate the extent to which VETiS is providing some general and transferable skills, which are being taken by students to jobs in seemingly unrelated areas. In these cases VETiS may be acting more like general education.

A follow-up study that uses the 4-digit or even 6-digit ANZSCO qualifications may be more informative and may enable us to make finer segmentations.

VETiS is primarily a VET program and should be considered as such. Although it may be delivering qualifications at the lower level of the Australian Qualifications Framework, it should not be considered to be a poorer cousin of mainstream VET. Being located in the secondary education sector, it needs to coexist with the general education program; that is, subject to the decisions about timetabling, resourcing and timing applying to mainstream programs. However, VETiS may also be operating as a streaming mechanism, whereby education is personalised according to school perceptions of students' needs. This could result in the non-academically interested or able students, or the disengaged students, being channelled into the more skills-focused VETiS programs (removing from the mainstream programs some behavioural management issues – the disengaged students). If this is the case, it is important that VETiS students from these groups are also given every opportunity to develop their knowledge and skills in the foundation literacy and numeracy skills, as well as in other general education subjects, enabling them to be well equipped to continue on to further studies or to move into good jobs in the labour market when they leave school.

We have also found that around 18% of students who completed a non-school qualification, mainly in the non-trade areas, go on to achieve university qualifications at bachelor or higher-degree level (mainly bachelor degrees). This leads us to believe that VETiS may be catering for two types of students: the more academically able students and the less academically able or those who have low aspirations to continue on to academic studies. Why then are the first group undertaking the VETiS programs at all? It could be that the more academically able are choosing to do VETiS to access specialist facilities and equipment (for example, equipment for developing plastics, or for constructing 3D printing models), or that they have always aspired to enter a trade of a higher skill level or other specific vocational job. In addition, the availability of articulation pathways to universities may also enable these VETiS students to move more easily from VETiS programs to university. Other students may take advantage of the VET qualifications available in schools to give them the skills required for the jobs (for example, bar and waiting qualifications or retail qualifications) they may work in during their post-secondary school studies. The fact that the more academically able and interested students are also entering these programs (albeit in smaller numbers) might suggest that VETiS has a dual function: ensuring that the less academically or interested stay attached to the education sector; and providing a pathway for responding to the interests of the more academically able. These are issues for further investigation.

Our findings also show that considerable proportions of 2006 VETiS students have attained non-school qualifications in the same field as their VETiS studies. Not surprisingly, this is more relevant to students who undertook VETiS studies in the broad fields of engineering and related studies, architecture and building. Here around half of the students attained a non-school qualification in the same field, further highlighting the fact that trade-specific programs have a clear vocational role and are especially relevant to further training after school. In addition, substantial proportions of students who completed a non-school qualification did so at higher levels than their VETiS studies, at certificate I, II, III, IV levels. The fact that sizable proportions of 2006 VETiS students continue on with further studies in the same broad fields of education and at

VETiS may be catering for two types of students: the more academically able students and the less academically able or those who have low aspirations to continue on to academic studies.

higher levels than their VETiS studies is also a positive finding. It indicates that, for some students, VETiS has provided them with training relevant to the deeper learning characteristic of post-school education pathways.

There are two possible reasons for the increase in the uptake of certificate III qualifications in recent years: firstly, schools seek to ensure that students enter the workforce with some higher-level skills, making them more marketable; and, secondly, jurisdictions may be promoting these higher-level courses to enable students to gain more points towards the completion of secondary school studies or to boost their university entrance scores.

Certificate III programs are also focused on a wide range of technical programs, contradicting some views that VETiS programs are holding bays for the non-academically able or interested. The fact that students are undertaking programs in areas such as enrolled nursing, health and patient support services, concreting, construction, electrotechnology and engineering underscores the fact that VETiS is providing students with skills relevant to the changing labour market structures.

We must also note that the field of education classifications we used were at the broad rather than at the narrow or detailed fields of the ASCED classifications. A follow-up study could investigate whether the relationship between the intended FOE of the VETiS qualifications and the FOE of the actual non-school qualification is stronger at the 4-digit or higher levels of ASCED.

Further research

Our linked dataset connects 2006 VETiS data from the national VET in Schools Collection to data from the 2011 Census of Population and Housing, which means that the 2011 employment and training data are dated and may not be a true reflection of the current situation. Repeating the exercise by linking the 2011 data on VETiS to the 2016 census would provide a more up-to-date view of how the labour market operates for 2011 VETiS students.

We have been unable to use the employment and training outcomes for the 2006 VETiS students to make claims about the effectiveness of our VETiS programs. This is an important policy question and requires further research. This is because we have been unable to source a true control group of students, those who did not do VETiS studies in 2006, or a valid proxy for these non-VETiS students. This gap might be filled in a variety of ways:

- The most productive approach would be to access administrative data on students (both VETiS students and non-VETiS students) from state curriculum authorities (or their equivalents), which capture information on performance in national literacy and numeracy tests (that is, NAPLAN scores), as well as student performance on international tests. In addition, various states also have tracker studies that follow the fortunes of their senior secondary students on leaving school (for example, Queensland and Victoria).
- We might use data from the Longitudinal Surveys of Australian Youth (LSAY), as this source has the capacity to provide us with some good measures on cognitive ability, educational attainment and parental education and occupation.

It would be extremely useful from a policy perspective to investigate the other non-labour market training functions performed by VETiS programs in overall school operations such as providing alternative pathways for students who may be at risk of dropping out of school altogether or those for whom current general pathways are proving difficult.

In this study we looked at occupational destinations at the 1-digit level of ANZSCO; further work would benefit from expanding the occupational categories to include the specific occupations (perhaps at 4-digit and 6-digit levels of ANZSCO classifications) and university courses (in terms of fields of education or equivalent) undertaken by VETiS students. The limitations about not having a true control group still apply.

Further exploration of the national VET in Schools Collection to better understand the actual qualifications that are taken up by those students who move into university would be another area for further investigation.



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Appendix A – about the national VETiS Collection

Information on the uptake of VETiS programs is provided by the NCVET VET in Schools Collection. The NCVET VET in Schools Collection provides data on secondary school students who undertake vocational education in schools, which includes practical workplace skills and nationally recognised VET qualifications, mainly at certificate I, II and III levels, in addition to the senior school certificate. Students may also commence a part-time apprenticeship or traineeship while they are undertaking their senior secondary certificate. The data are collected via the senior secondary assessment boards in each state or territory (known as the board of studies) and reported through state training authorities, or directly through the boards of studies to NCVET.

Standardised data files are submitted to NCVET by 31 March each year. Records are submitted for individual students who have participated and contain data on demographics, schooling and prior education, and cultural and language attributes. Records are submitted for enrolments for each unit of competency or module enrolment for a student during the collection period. Individual records contain data on the delivery location for the client, module or unit of competency, start and end date, mode of delivery, outcome, and the number of hours of delivery for students in VET in Schools programs.

Records are submitted for each qualification or course associated with enrolment activity and completed qualifications during the collection period. Records contain data on the level and field of education, expected occupation outcome, and national accreditation status of the qualification. Records are also submitted for each module or unit of competency associated with enrolment activity. Individual records contain data on field of education and hours. Records are submitted for training organisations that deliver vocational education and training to school students. Individual records contain data on location and the registered training organisation trading name and national code. Locations associated with the delivery of enrolment activity are also provided.

Appendix B – ABS data linkage notes

At the completion of the linkage process, 51.01% (77 730 of 152 367) of the in-scope VETiS records were successfully linked to census records.

- Weighting is the process of adjusting a sample to infer results for the relevant population. To do this, a ‘weight’ is allocated to each sample unit, in this case, student records. The weight can be considered an indication of how many students in the relevant population are represented by each person in the sample. Weights were created for linked records to enable population estimates to be produced.
- The estimates in this publication are obtained by assigning a ‘weight’ to each linked record. The weight is a value which indicates how many student population records are represented by the linked record. Weights aim to adjust for the fact that the linked student records may not be representative of all the student records. Weighting was used to ensure better representation of population sub-groups and to enhance the reliability of linked education data for longitudinal and cross-sectional analysis.
- Weights were benchmarked to the following population groups: postcode (129 groups), with large postcodes, those with 800 persons or more, weighted individually and smaller postcodes grouped together by state, sex, age and Indigenous status (50 groups), country of birth (6 groups), with Australia, New Zealand, the United Kingdom, China and surrounding territories, other countries, and not stated/missing responses as separate groups, <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4260.0Explanatory%20Notes312006-2011?OpenDocument>>.
- *At least Year 12 includes:* postgraduate degree level, nfd, doctoral degree level, higher doctorate, doctorate by research, doctorate by coursework, professional specialist qualification, doctoral level, master degree level, nfd, master degree by research, master degree by coursework, professional specialist qualification, master level, graduate diploma and graduate certificate level, nfd, graduate diploma level, nfd, graduate diploma, professional specialist qualification, graduate diploma level, graduate certificate level, nfd, graduate certificate, professional specialist qualification, graduate certificate level, bachelor degree level, nfd, bachelor (honours) degree, bachelor (pass) degree, advanced diploma and diploma level, nfd, advanced diploma and associate degree level, nfd, advanced diploma, associated degree, diploma level, nfd, diploma, certificate level, nfd, certificate III and IV level, nfd, certificate IV, certificate III, Year 12.
- *Lower than Year 12 includes:* certificate I and II level, nfd, certificate II, certificate I, Year 11, Year 10, Year 9, Year 8 or below, no educational attainment.

Appendix C – most frequently used VETiS training package qualifications, 2006

Table C1 Frequently used training package qualifications by number of enrolments, 2006

Domain of qualification	Highest number	Second highest number	Third highest number
Agriculture, horticulture and conservation and land management, racing	Cert. II Agriculture N=2603	Cert. II Horticulture N=812	Cert. II Rural Studies N=505
Automotive	Cert. II Automotive (Mechanical – Vehicle Servicing) N=382	Cert. III Automotive (Mechanical Technology), N=86	Cert. II Automotive (Vehicle Body – Paint/Panel Preparation), N=35
Beauty, nails and hairdressing	Cert. II Hairdressing N=1678	Cert. II Retail Cosmetic Services N=758	Cert. III Beauty services N=587
Business management and financial services	Cert. II Business N=23 555	Cert. I Business N=3724	Cert. III Business N=704
Community services	Cert. II Community Services Work N=3459	Cert. III Children's Services N=1312	Cert. III Aged Care Work N=459
Construction and plumbing	Cert. I General Construction N=3781	Cert. II General Construction N=1189	Cert. III Carpentry N=302
Electro-technology	Cert. I Electro-technology N=552	Cert. II Electro-technology – Servicing N=68	Cert. III Electro-technology – Systems Electrician N=49
Engineering	Cert. I Engineering N=3584	Cert. II Engineering – Production (including Production Technology) N= 1299	Cert. II Aero-skills N=116
Furnishing, furniture making, upholstery	Cert. I Furnishing N=2961	Cert. II Furniture Making N=300	Cert. III Furniture Making (Cabinet Making) N=55
Hospitality	Cert. II Hospitality Operations N=23 507	Cert. I Hospitality Operations N=2668	Cert. 1 Hospitality Kitchen Operations N= 1763
Health	Cert. II Animal Studies, N=365	Cert. III Non-Emergency Transport & Support, N=182	Cert. II Health Support Services (Client Patient Support), N=52
Information and communications technology	Cert. II Information Technology N=11 736	Cert. III Information Technology – Software Applications N=4827	Cert. III Information Technology –General N=2266
Live production theatre and events	Cert. II Live Production Theatre and Events N=1269	Cert. III Live Production Theatre and Events N= 968	Cert. I Live Production Theatre and Events, N=62
Music	Cert. I Music Industry Foundations N=1713	Cert. III Music Technical Production N=677	Cert. III Music N=498
Retail	Cert. II Retail Operations N=5666	Cert. I Retail Operations N=1739	Cert. III Retail Operations N=841
Screen and media	Cert. II Broadcasting N=2551	Cert. III Multimedia N=2186	Cert. II Screen N=188
Visual arts and design	Cert. III Visual Arts and Contemporary Craft, N=432	Certificate IV in Design, N = 171	Cert. III in Design Fundamentals, N=129
Sport, fitness and recreation	Cert. II Community Recreation 2392	Cert. II Outdoor Recreation N=1442	Cert. II Sport & Recreation N=963
Tourism	<i>Cert. II Tourism (Operations) N= 3490</i>	<i>Cert. III Tourism (Operations) N=82</i>	<i>Cert. II Tourism (Sales/Operations), N=52</i>

Source: National VET in Schools Collection 2006.

Appendix D – training packages with zero reports for apprentices and trainees

Table D1 Training Packages with zero reports for school-based apprentices or trainees

2006	2010	2015
AGF - AgriFood (AGF, AGR)	AGF - AgriFood (AGF, AGR)	AGF - AgriFood (AGF, AGR)
AVI - Aviation (AVI, TDA, ZQF)	CSC - Correctional Services (CSC)	CSC - Correctional Services (CSC)
CSC - Correctional Services (CSC)	DEF - Defence (DEF)	DEF - Defence (DEF)
DEF - Defence (DEF)	FSK - Foundation Skills (FSK)	LGA - Local Government (LGA)
FSK - Foundation Skills (FSK)	SHB - Hairdressing and Beauty Services (includes SIB)	PMC - Manufactured Mineral Products (PMC)
LGA - Local Government (LGA)	SIF - Funeral Services (includes WFS)	RTE - Rural Production
MSA - Manufacturing (MCM, MSA)	UEP - Electricity Supply Industry - Generation Sector (UEP, UTP)	SHB - Hairdressing and Beauty Services (includes SIB)
PMA - Chemical, Hydrocarbons and Refining (PMA)	ZKO - Kodak-Australasia (ZKO) ^(b)	TAE - Training and Education (BSZ, TAA, TAE)
PSP - Public Services (PSP)		UEP - Electricity Supply Industry - Generation Sector (UEP, UTP)
SHB - Hairdressing and Beauty Services (includes SIB)		UET - Transmission, Distribution and Rail (UET, UTT)
SIF - Funeral Services (includes WFS)		ZKO - Kodak-Australasia (ZKO)
TAE - Training and Education (BSZ, TAA, TAE)		ZWA - Woolworths (ZWA) ^(c)
UEP - Electricity Supply Industry - Generation Sector (UEP, UTP)		
UET - Transmission, Distribution and Rail (UET, UTT)		
ZKO - Kodak-Australasia (ZKO) ^(a)		

Notes: (a) (b) In 2004 Kodak Australia closed its manufacturing plant in Coburg, Victoria. Details on this Training Package are also marked as confidential.

(c) Details on this Training Package are also marked as confidential.

Source: 2006 National VET in Schools Collection.

Appendix E – training programs and occupations

Table E1 Occupations of employment by training packages and non-training package program undertake, %

	Managers	Professionals	Technicians and trades workers	Community and personal service workers	Clerical and administrative workers	Sales workers	Machinery operators and drivers	Labourers
Agriculture, Horticulture and Conservation and Land Management (AHC, RTD, RTE, RTF, RUA, RUH)	6	4	34	11	5	11	10	20
Arts and Culture (CUV)	5	13	12	18	17	22	4	10
Automotive Industry Retail, Service and Repair (AUR)	4	3	53	5	4	6	9	16
Beauty (SIB, WRB)	5	6	11	29	21	23	na	na
Business Services (BSA, BSB)	6	10	14	16	24	18	4	8
Community Services (CHC)	5	8	7	36	19	18	2	6
Construction, Plumbing & Services Integrated Framework (BCF, BCG, BCP, CPC)	4	4	50	8	4	7	8	16
Electrotechnology (UEE, UTE, UTL)	na	na	63	6	5	6	6	8
Furnishing (LMF, MSF)	3	3	49	7	3	7	11	18
Hairdressing (SIH, WRH)	3	4	24	22	22	20	2	3
Information and Communications Technology (ICA)	5	12	24	13	13	17	6	11
Live Performance and Entertainment (CUA, CUE)	6	13	17	18	16	19	3	8
Metal and Engineering (MEM)	4	4	53	6	3	6	8	16
Music (CUS)	4	12	19	17	13	20	5	10
Property Services (CPP, PRD, PRM, PRS)	na	9	14	12	23	24	na	9
Retail Services (SIR, WRP, WRR, WRW)	7	10	13	18	19	22	4	7
Screen and Media (CUF)	4	13	20	14	14	20	4	10
Sport, Fitness and Recreation (SIS, SRC, SRF, SRO, SRS)	5	6	26	20	12	14	5	12
Tourism, Travel and Hospitality (SIT, THH, THT)	6	9	15	23	19	18	3	8
Non-training package	5	8	31	12	12	16	5	11

Note: Data in cells marked na was not available due to ABS confidentiality restrictions.

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

Appendix F – most common destinations for training package programs

Table F1 Most common 2011 ANZSCO destination occupations by training package and non-training package programs

Training package non-training package programs	Most common occupations in order of frequency of reporting	% of VETiS students moving into technician and trade jobs in 2011
Agriculture, Horticulture and Conservation and Land Management	Technicians and trades workers and labourers	34
Arts and Culture	Sales workers, and community and personal service workers	12
Automotive Industry Retail, Service and Repair	Technicians and trades workers and labourers	53
Beauty	Community and personal service workers, sales workers and clerical and administrative workers	11
Business Services	Clerical and administrative workers, sales workers, community and personal service workers, technician and trade workers and professionals	14
Community Services	Community and personal service workers, clerical and administrative workers, and sales workers	7
Construction, Plumbing & Services Integrated Framework	Technicians and trades workers and labourers	50
Electro-technology	Technicians and trades workers	63
Furnishing	Technicians and trades workers, labourers, and machinery operators and drivers	49
Hairdressing	Technicians and trades workers, clerical and administrative workers, community and personal service workers, and sales workers	24
Information and Communications Technology	Technicians and trades workers, sales workers, community and personal service workers, clerical and administrative workers and professionals	24
Live Performance and Entertainment	Sales workers, community and personal service workers, technician and trade workers, clerical and administrative workers, and professionals	17
Metal and Engineering	Technicians and trades workers and labourers	53
Music	Sales workers, technicians and trade workers, and community and personal service workers	19
Property Services	Sales workers, clerical and administrative workers, and technician and trade workers	14
Retail Services	Sales workers, clerical and administrative workers, and community and personal service workers	13
Screen and Media	Sales workers, technician and trade workers, community and personal service workers and clerical and administrative workers	20
Sport, Fitness and Recreation	Technicians and trades workers, community and personal service workers, sales workers, labourers and clerical and administrative workers	26
Tourism, Travel and Hospitality	Community and personal service workers, clerical and administrative workers, sales workers, and technicians and trade workers	15
Non-training package	Technicians and trades workers, sales workers, community and personal service workers, clerical and administrative workers and labourers	31

Source: 2006 National VET in Schools Collection and 2011 Census of Population and Housing Integrated Data Set.

Appendix G – identifying Year 12 equivalence

Table G1 Derivations of HEAP decision table

Highest Year of School Completed (HSCP)	Non-School Qualification: Level of Education (QALLP)						
	Certificate nfd (500)	Certificate III & IV (510)	Certificate IV (511)	Certificate III (514)	Certificate I & II nfd (520)	Certificate II (521)	Certificate I (524)
Year 12 (611)	Year 12	Cert. III & IV nfd	Cert. IV	Cert. III	Year 12	Year 12	Year 12
Year 11 (613)	Year 11	Cert. III & IV nfd	Cert. IV	Cert. III	Year 11	Year 11	Year 11
Year 10 (621)	Year 10	Cert. III & IV nfd	Cert. IV	Cert. III	Year 10	Year 10	Year 10
Year 9 (622)	Year 9	Cert. III & IV nfd	Cert. IV	Cert. III	Cert. I & II nfd	Cert. II	Cert. I
Year 8 or below (623)	Year 8 or below	Cert. III & IV nfd	Cert. IV	Cert. III	Cert. I & II nfd	Cert. II	Cert. I

Source: <<http://www.abs.gov.au/websitedbs/censushome.nsf/home/statementspersonheap?opendocument&navpos=430>>.



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