

The best of both worlds? Integrating VET and higher education

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This document should be attributed as Hodge, S & Knight, E 2021, *The best of both worlds? Integrating VET and higher education*, NCVER, Adelaide.

This work has been produced by NCVER on behalf of the Australian Government and state and territory governments, with funding provided through the Australian Government Department of Education, Skills and Employment.

COVER IMAGE: GETTY IMAGES

ISBN 978-1-925717-85-3

TD/TNC 146.02

Published by NCVER, ABN 87 007 967 311

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About the research

The best of both worlds? Integrating VET and higher education

Steven Hodge, Griffith University and Elizabeth Knight, Victoria University

There is renewed interest in better aligning vocational education and training (VET) and higher education (HE) to enable students to move between, and draw from, both sectors. This is not a new concept, with a long history of policies, research projects and reports examining and promoting pathways between the two sectors.

Loosely integrated qualifications, whereby pathways might be endorsed but where no credit is specified or arranged, are numerous. In these examples, the possibility of following a pathway (usually from VET to HE) exists, but responsibility falls on the student to navigate it.

This project is focused on more highly integrated VET and HE qualifications, those that can be described as ‘consecutive’, ‘concurrent’ or ‘embedded’. These integrated models are designed to provide clear linkages and pathways between VET and HE qualifications, enabling better student engagement with both. Through the examination of existing examples of these more highly integrated qualifications, this project explored the characteristics of such arrangements, determining whether and how they might be implemented more broadly.

Key messages

- Highly integrated VET and HE qualifications are difficult and expensive to develop. This is primarily due to the comprehensive mapping of VET and HE content required, a time-consuming process involving skilled personnel. Other challenges include overcoming competitive pressures between the integrating institutions, convincing industry and employers to invest in and recognise integrated arrangements, and creating delivery schedules acceptable to students.
- Sustainability may be a persistent issue for higher integration models. These models might be more widespread and sustainable if certain conditions were met, including:
 - Providers are supported with the expertise and resources to undertake mapping processes.
 - Value and support by collaborating providers.
 - Industries and employers value both VET and HE qualifications in the integration.
 - Students find the integration attractive and the associated demands acceptable.
- This project suggests that greater programmatic integration of qualifications may not be the best way to promote greater integration of VET and HE, largely because of the difficulties in developing and sustaining them. Further, integrated qualifications would only be useful in some industry areas, and not necessarily in large numbers. They may only be viable as niche offerings and where the conditions listed above are met.
- Less tightly integrated models of integration that do not require the same investment and expertise to initiate are likely to be a more sustainable approach.

Acknowledgments

We would like to thank all of those who generously gave their time to complete surveys and participate in interviews with us.

Thanks also to Leah Micallef for administrative assistance throughout the project and to Professor Susan Webb for her work with us on an earlier project (Vocational Institutions, Undergraduate Degrees, ARC Discovery Project), which enhanced our understanding of the complex landscape of 'mid-range' qualifications in Australia.

We'd also like to acknowledge the Victoria University Centre for International Research in Education Systems staff, particularly Robyn Klepetko, and Sharm Aboosally from Griffith Enterprise Solutions.

Finally, we thank Dr Tabatha Griffin from NCVET for her helpful input and stylistic guidance.

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Executive summary

For the most part, Australians who wish to continue to develop their skills may face something of a dilemma. They can enrol in a vocational education and training (VET) course with a distinct occupational focus. Alternatively, the higher education (HE) system offers courses that may be tied to occupations or focused on academic disciplines. While the two sectors differ in purpose and content, they also offer different experiences of teaching and assessment and are funded, regulated, governed and culturally valued in different ways. In brief, the tertiary education environment is binary in structure (Parker, Dempster & Warburton 2018) and not necessarily geared to facilitating the development of individuals where the benefits of each sector are combined.

Enabling student movement between the VET and HE sectors has been a long-term workforce development policy goal; however, it is no easy task. Over the past few decades, a range of reports, research projects and policies have examined and promoted pathways that use qualifications as the vehicle for facilitating movement between the sectors. As recently as 2020, the VET Reform Roadmap had among its goals building on existing cross-sector cooperation, specifying ‘stronger alignment and integration between VET and higher education’ as one of seven destinations to be reached (Department of Education, Skills and Employment 2020 p.4).

In contributing to the VET Reform Roadmap’s goal, this project aimed to identify and examine the characteristics of existing ‘integrated qualifications’ to determine whether and how these arrangements might be implemented more broadly.

Models of integrated qualifications

Four models of integrated qualifications were differentiated through a review of the literature:

- *endorsed*: specific course at specific provider indicated, but with credit unspecified
- *consecutive*:¹ separate enrolments but course accepted as ‘guaranteed’ or ‘linked’ pathway, evident in dual-sector providers
- *concurrent*: dual enrolment into both VET and higher education courses, undertaken within same period but either by block release or scheduled study
- *embedded*: dual enrolment with courses taught together within specific program arrangement, with both qualifications awarded at end of program.

The endorsed models represent lower levels of integration, while the consecutive, concurrent and embedded models represent higher levels. The bulk of the arrangements identified in a desktop search of VET and higher education provider offerings exemplified the lower integration model. Few concurrent and embedded examples were located. This research focused on the three higher integration models.

Higher integration models can be difficult and expensive to develop. Not only that, but they also appear challenging to sustain. Of the 28 higher integration examples identified in this research (from 2016 onwards), 14 were judged to have been discontinued, with the status of a further seven either unclear or

¹ The label ‘articulated’ was considered for this model; however, historical usage of this term in policy and research is broad and in particular cases could apply to any of the four models.

presumed discontinued. One embedded example recently offered but which did not commence was also identified. Historical examples of discontinued integrations were also uncovered via interviews with tertiary education experts and institutional staff connected with the design and/or management of higher integration examples (consecutive, concurrent and embedded models). These interviews revealed decades of pathways development and a substantial series of integrated qualifications that had proved unsustainable.

Case studies of consecutive, concurrent and embedded models shed light on some of the difficulties that beset efforts to integrate cross-sectoral qualifications at the highest levels. These challenges include the imperative to undertake comprehensive and complex ‘mapping’ of VET and higher education content as a preliminary to the formalisation of offerings; overcoming competitive pressures, which may pit integrating institutions against each other; convincing industry and employers to invest in and continue to recognise integrated arrangements; and creating delivery schedules that students find acceptable.

Characteristics of sustainable integrated models

Where higher integration arrangements are sustainable, the benefits for providers are clear and can include additional revenue streams, greater resilience through partnerships and distinctive brand identity. On the other hand, the benefits for students, employers and industry more broadly are more difficult to identify. Potential benefits for students include enabling combinations of technical and soft or transferable skills (such as communication and self-management) (Snell, Gekara & Gatt 2016); facilitating individual skill and knowledge development across contemporary careers; and supporting a parity of esteem between the two sectors.

What helps to ensure the sustainability of integrated VET and HE arrangements? This research identifies a range of characteristics common to sustainable integrations:

- adequate provision of resources and expertise to prepare mapping documents
- high trust between, and support from within, integrating institutions
- formal collaboration of teaching teams across institutions
- geographically close provision of both VET and HE elements
- industry and employer support and recognition of both the VET and HE components of integrated qualifications
- typical patterns of student study and employment, which make study of VET and HE components feasible over the longer-term.

Conditions for broader implementation

The research suggests that integrated qualifications – at least the higher integration models investigated – might be implemented more broadly if the following range of conditions are met:

- **Resources and expertise**

Collaborating providers require resources and expertise to accomplish the mapping process. The research found that this is a substantial undertaking, requiring uncommon skill sets. Mapping takes significant development time, utilises specialised staff, and is therefore costly. Governments and other stakeholders interested in pursuing high integration models should take the challenge of mapping into account and potentially fund the process. Possibly a great many more and valuable

integrated qualifications would be available if the resources and expertise were at ready disposal for the initial mapping exercise.

- **Value and support by institutions**

Integrated qualifications need to be valued and supported by collaborating institutions. Staff involved in the collaboration should demonstrate openness to the strengths of the other sector, while leadership needs to signal support throughout the institution to ensure the most favourable outcome.

- **Recognition and utilisation by industry and employers**

Industry support for the integration does not appear to be sufficient in itself; rather, arrangements appear more sustainable when industry and employers recognises both the VET and HE components of the integration. Employers also need to value graduates from integrated qualifications. Having both industry support and involvement in the development of an integration, along with ongoing employer valuation of the qualification, appears to be ideal.

- **Acceptance by and attraction to students**

An integration needs to be accepted by and attractive to students. Internally, an integration is likely to be more successful if it explicitly supports the transition between the different styles of delivery and assessment inherent in different qualifications, while the employment patterns typical of the industries in which students are involved need to be conducive to engagement with the integration. If an integrated qualification is inconvenient to access, or if learning is made difficult by a sudden shift from the VET to HE styles of teaching and content, or work placement restrictions impose economic burdens on students, then low take-up among students may follow.

The future of integrated VET and HE qualifications

The current binary structure of the post-school education and training landscape creates some challenges for individuals, communities and industry. This project suggests that greater integration of qualifications may not be the best way to promote greater integration of VET and HE, largely because of the difficulties associated with developing and sustaining them. Further, it was noted by research participants that integrated qualifications would only be useful in some industry areas, and not necessarily in large numbers. They may only be viable as niche offerings and where the conditions described above are met. Less tightly integrated models of integration that do not require the same investment and expertise to initiate are likely to be a more sustainable approach.



Integrated qualification models

This project

The VET Reform Roadmap (Department of Education, Skills and Employment 2020) had among its goals building on existing cross-sector cooperation, specifying ‘stronger alignment and integration between VET and higher education’ (p.4) as one of seven destinations to be reached by following the roadmap.

To inform this goal, this project explored existing arrangements of integrated vocational education and training (VET) and higher education (HE) qualifications to determine whether, and how, these arrangements could be implemented more broadly. To do so, the research gathered data on four questions:

- How can integrated VET–HE qualifications (or other credentials) be defined in the Australian context?
- What models of integrated VET–HE qualifications (or other credentials) currently exist?
- What credit pathways and articulation arrangements are currently being used?
- What funding, governance and regulation arrangements do these integration models fall under, and are these effective?

Data were gathered from three sources:

- a desktop search of institutional offerings, news items and policies; this was conducted to identify existing examples and practices of integration
- interviews with staff of institutions that offered integrated qualifications; questions focused on the practical aspects of integration within these examples and form the basis of the five case studies presented in this report
- a survey of, and interviews with, tertiary education experts; the questions for this group broadly concerned policy.

More detail regarding the methodology is presented in appendix A.

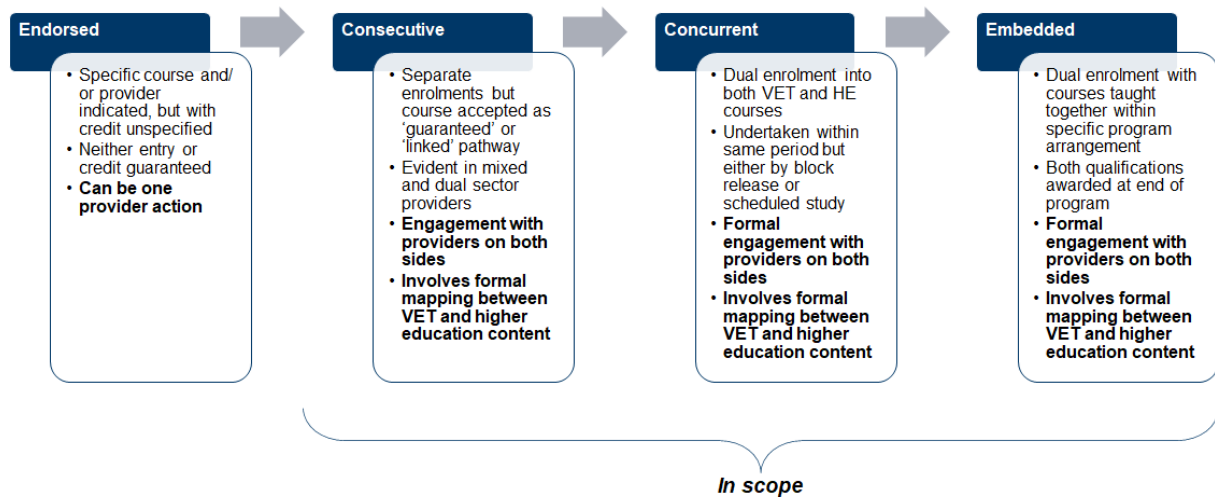
Key points

- Higher integration models have been difficult to sustain
- Higher integration examples are restricted to a few disciplines

Models of integrated qualifications

In the Australian tertiary education context, four models of integrated qualifications were identified, based on an initial review of the literature (figure 1).

Figure 1 Typology of models of integrated qualifications



The endorsed model represents lower levels, while the consecutive, concurrent and embedded models represent higher levels of integration of qualifications. Another type of arrangement was found that suggested certain pathways between VET and higher education qualifications were possible, although the qualifications were not specified. Since this type of arrangement did not identify the exact mix of qualifications, it was not included as an integration model.

A desktop search² of institutional offerings found that the *'endorsed' model* is a relatively common integration. It appears that many VET and HE providers embrace the concept of 'pathways', perhaps responding to sustained interest by government and industry stakeholders in a more interconnected tertiary landscape and/or viewing the concept as a valuable marketing message. An example is the non-university higher education provider, the Academy of Music and Performing Arts, which has a pathways program for graduates of specified VET diplomas and advanced diplomas.³ Market positioning may be a motive for endorsing pathways, although evidence of some understanding between marketing and named institution(s) is presumably involved. However, neither entry nor the type and amount of credit is guaranteed. Rather, credit 'up to' a certain level may be indicated. These arrangements can be seen in the explanation of complicated arrangements at Charles Darwin University, which provides a VET to HE pathways mapping calculator and a clear table with credit maximum ('up to') amounts.⁴

The *'consecutive' model* is characterised by some guarantee of credit or formal linkage arrangement between qualifications. This, and the following two models, are distinguished by formal 'mapping' processes between VET and HE qualifications, which allow credit to be specified. Engagement between both VET and HE providers would be a condition of publicising these guarantees. Relatively few examples of the consecutive model were identified, although generic 'guaranteed pathway' packages may be

2 See appendix A for detailed methodology.

3 <<https://www.ampa.edu.au/index.php/pathways>>.

4 <<https://www.cdu.edu.au/study/fns40217-certificate-iv-accounting-and-bookkeeping-fns40217-2021>>.

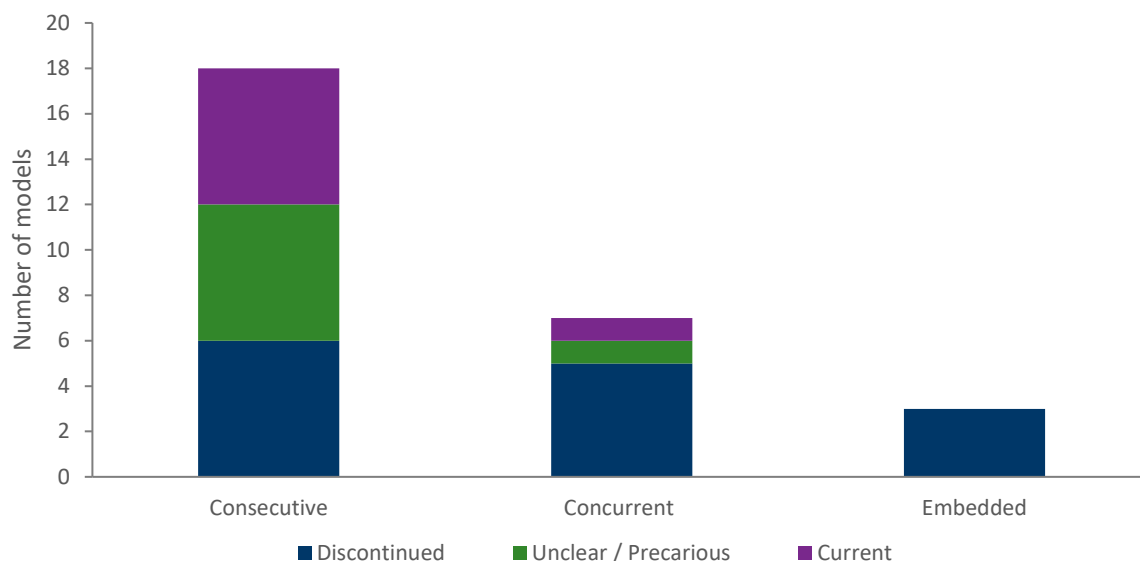
offered, with the potential to embrace multiple entry and exit qualifications. These variations of the consecutive model were mainly found within mixed-⁵ and dual-sector institutions. Other examples of this model were based on collaborations between a VET and an HE provider.

The ‘concurrent’ model went beyond the consecutive by explicitly tying the VET and HE components together within a set delivery framework; for example, students might commence with VET studies, move to a mix of VET and HE studies, and complete with HE studies. Very few examples of concurrent models could be identified. The VET and HE components were kept separate.

The highest level of integration found in the search stage was the ‘embedded’ model. Here, some teaching and/or assessment of combined VET and HE content were seen. Only one of these integrations was identified.

Examples of each of these models are presented in case studies below. The more highly integrated models (consecutive, concurrent and embedded) are the focus of this research. Based on reports by interviewees and the desktop search, a total of 28 higher integration examples developed since 2016 were identified. Of these, 14 arrangements were judged to be discontinued, with the status of a further seven either unclear, precarious, or presumed discontinued. The search identified one embedded example, which had recently been offered but did not commence. Figure 2 shows the proportion of each status in each of the higher integration categories. While many discontinued examples featured in all models of higher integration, there was significant difference between the three types in terms of how many were still actively recruiting students.

Figure 2 Current status of high integration models examined, 2016–current



The desktop search also found that seven of the 28 examples were within-institution arrangements (for example, a dual-sector provider) and the remainder were between providers. The search showed that certain discipline or industry areas predominated among the higher integration examples. These were

5 Mixed-sector institutions were defined by Moodie as ‘those with at least 3% but no more than 20% of their student load enrolled in their minority sector’ (Moodie 2010, p.9); these mixed-sector institutions are often TAFE or other RTO providers with non-university higher education provider status.

education and engineering, followed by construction, nursing and health. Table 1 presents the areas addressed by the higher integration qualifications.

Table 1 Summary of industry areas in examined examples of higher integration, 2016–current

Industry area	Numbers examined
Education	5
Engineering	4
Construction	2
Nursing	2
Health	2
VET health	1
Agriculture	1
Hospitality/commerce	1
Business	1
Defence	1
Creative arts	1
Accounting	1
Hospitality	1
Multi-industry/non-specific	5
Total	28



Case studies of integrated models

Five case studies were developed for this research: one embedded model; two concurrent models and two consecutive models. Examples were de-identified in each case.

Embedded model

Only one example of the embedded model was identified: no students had ever been enrolled in this model and it had been discontinued in an integrated form by the time of our interview with the main institutional representative. An initiative between industry, VET and HE providers, with state government involvement, this example aimed to meet demand for advanced manufacturing capability. The impetus was the recent loss of manufacturing industries in a major region. The remaining industries sought to actively shape the skill and knowledge profile of the local workforce, with a view to an innovation-led recovery. Some of the thinking behind the integrated qualification was influenced by visits to overseas sites where regional economies had been reinvigorated by policies that included close collaboration between VET and HE providers.

This example involved considerable liaison between the VET and HE partners to combine apprenticeship programs with an Associate Degree in Advanced Manufacturing. Apprentices who excelled in the first two years of their program would be recruited to the integrated qualification, undertaking HE and VET studies at the same time in the second and final year of their apprenticeship. The intention was that, in practice, these two modes of study would be tightly integrated. The leader of the integrated program was based in the HE provider but had several years of prior experience working in a VET institution. Their knowledge of training packages was deemed especially important for the initiative.

The program leader reported significant challenges with integrating curriculum, pedagogy and assessment across the VET and HE components of the program, with a lengthy ‘mapping’ process the initial step. Taking nearly two years, the mapping involved liaison with multiple stakeholders (to determine ‘elective’ structures within the associate degree component), along with identification of content common to the relevant training package units of competency on the VET side and the associate degree curriculum on the other. The mapping served to isolate those components of the curriculum that were unique to the HE side and therefore needed to be taught and assessed in addition to the VET curriculum.

For the common content, the approach adopted was that HE learning and assessment would be undertaken simultaneously with the VET learning and assessment, during students’ project work. The informant described this approach as ‘overly ambitious’. Some of the HE-specific content relating to ‘soft skills’ could be superimposed on the project learning, with little impact on students and VET teachers. Other content not in common and which could not be addressed during the project was to be taught and assessed on HE institution premises in a standard semester course mode, although with considerable modification to minimise disruption to apprentices’ work routines. HE curriculum was to be delivered in evening workshops and online. Some anxiety was evident during this design process because changes to the key training package were imminent, foreshadowing complicated adjustments to the combined activities.

This integrated program had cleared respective VET and HE provider quality assurance processes and was in place for initial enrolments. However, no applications were received for the first intake and the program was shelved immediately. Several reasons were given for the demise of this integrated qualification:

- Employers appeared to have second thoughts about the initiative, since their highest-performing apprentices would be burdened with extra work and require leave to engage in the HE component of the program.
- It was reported that employers may have feared the loss of capable employees through the integrated qualification, given that the apprentices' view of labour market opportunities would expand and their susceptibility to direct recruitment by other employers would increase.
- The cost of HE study was greater than anticipated by employers and students alike, creating a strong disincentive to participate.
- Relationships between the VET and HE providers were strained. While the program leader we interviewed was a single point of contact, in the VET provider there were no staff specifically dedicated to the initiative, creating extra difficulties in the design of the qualification. In addition, the VET provider offered a diploma in competition with the associate degree. This competitive pressure appeared to undermine close collaboration between the two institutions.

After the experiment with the embedded model, the HE institution moved to a non-integrated model, whereby the associate degree subsequently recruited tradespeople who had completed their apprenticeship, enrolling students with a level of skill and maturity who had studied with a range of VET providers. The representative explained that the mapping work and the design of learning and assessment projects undertaken for the integrated qualification were used in the successor program. Some delivery and assessment innovation had resulted from the initiative.

Concurrent model

Two examples of the 'concurrent' model were investigated for this research. The first concurrent model example was based on a ten-year collaboration between a VET and an HE provider. The two providers were within a short walking-distance from each other and shared the same bus stop. They could be considered co-located, creating an environment that was conducive to integration. The integrated qualification itself was an initiative of teaching staff of the HE provider, who were aware of the competencies in an Advanced Diploma of Hospitality offered by the VET provider in a field related to their own management degree. The VET component contributed tourism industry skills and knowledge, while the HE part brought in the management discipline. The final competencies from the advanced diploma were identified as a close match to some of the first-year curriculum in the bachelor degree. During the design of the integrated qualification, these units of competency were formally mapped to the bachelor degree curriculum.

The mapping covered some, but not all, of the early part of the bachelor degree, which meant students would be given some advanced standing into the degree. Students would therefore complete their advanced diploma and commence their HE studies during the same period. On the VET provider side, the advanced diploma was offered as both a stand-alone qualification and in the integrated mode. Students opting for the integrated mode would study their final units from the advanced diploma with the VET provider but also attend the HE provider to complete the remaining first year subjects of the bachelor degree. The informant revealed that student numbers were counted in the tens of students each year.

Apart from the mapping exercise, no further integration of assessment, teaching or curriculum characterised the qualification. However, staff from each institution had a schedule of meetings

throughout the year to monitor the collaboration and discuss student progress. The informant explained that these meetings helped to maintain the health of the collaboration and gave teaching staff a greater understanding of the delivery styles of the respective institutions. On the VET side, a more intimate teaching environment was in place, with smaller student groups and high levels of scaffolding, especially with regard to assessment requirements. It was reported that students encountered quite a different style of teaching in the HE setting, where they were in large lecture groups and also in smaller tutorial groups, characterised by open dialogue rather than content delivery and scaffolding. The informant conceded that some students withdrew from the HE part of their studies, opting to graduate with the advanced diploma, although they may return to HE after some time in the workforce.

The informant described the VET students as well grounded in industry and able to bring this experience to their HE learning and assessment. Within the HE degree, additional skills were developed, those giving students a unique and attractive blend of industry awareness and organisation and management skills. The informant stated that ‘the vocational pathway provides the content for the [students] to relate to, so it’s quite [a] good symmetry and that’s why I think it has lasted as long as it has [10 years]’. Nevertheless, it was evident that this integration was dependent on an annual renewal of collaboration, a situation that rendered the arrangement precarious. It should be noted that the advanced diploma students benefited from state government subsidies, while standard HE income-contingent loans were accessed by students for the degree component of their studies. In general, few regulation issues arose for this example of integration, because the VET and HE components were kept separate and the mapping was the only curricular integration evident in the program. As mentioned, curriculum, delivery and assessment were also distinct.

The second concurrent example was an integration in the field of animal care and management, an integrated model that had been operating for a number of years and which was also based in a regional area with elements of co-location. In this example, a certificate IV qualification was integrated into the first year of a bachelor degree. Each qualification was valued by the relevant industry and it was the close relations between staff from the HE institution and the industry representatives that provided the impetus for the integration.

The integration was developed through a \$700K state government grant, which was primarily used to fund the mapping process. Awarded to both the VET and HE providers, the grant facilitated close cooperation between the staff of both providers to develop the integration. The HE provider-based informant stressed the need for robust, quality mapping with input from industry as a key to a successful integration. The informant described the process as ‘really challenging intellectual work to get it right’. Rigorous mapping also helped to convince HE institution management that the integration was worthwhile supporting. The mapping was vulnerable to changes in the relevant training package, although the quality of the initial mapping reduced the associated disruption. The informant reflected that, without the substantial grant to support the process, the integration would not have been possible.

Students entering the integration would study a certificate IV course with a VET provider and at the same time take subjects from the first year of a bachelor degree. The informant explained that the students represented a range of backgrounds and ages. Attrition was flagged as a concern, but it was ameliorated to some extent by the fact that students could remain with the VET component of the integration and graduate with a qualification, an option stressed as being a great attraction of the arrangement. According to the informant, integrations like this one were the ‘way forward’ for students, who are able to pursue their tertiary studies with options to qualify at different levels. It was noted that the HE provider offered a suite of non-accredited support courses, which scaffolded students’ journey into HE, reducing the impact of the shift to HE styles of delivery and assessment. However, VET and HE governance, teaching and assessment processes remained separate in the integration. This practice

meant that the integration did not create regulatory issues for either institution once the initial hurdle of integration design (overcome through quality mapping) was cleared.

This example was the most successful of the high-integration models investigated in the project, with the qualification attracting around 100 students per year, and despite some attrition the program at this stage supports around 200 ongoing students. The clear industry relevance of the individual VET and HE qualifications was an important factor, as was direct industry support for the integration. The grant to establish the integration was critical to its success, mainly because the curriculum-mapping process needed to be robust and it required lengthy preparation by people skilled in the operation of both sectors, as well as having the capacity to translate the curriculum of each. Also important was the approach offered by the HE institution to support non-traditional students to succeed in HE studies. It should be noted that this was the most 'niche' of the integration examples studied since it addressed a technical specialisation in a way that was not seen elsewhere.

Consecutive model

Twelve examples of the 'consecutive' model were identified and approached to participate in this research. Two cases are summarised here, followed by discussion of the key features of the examples as a whole. The first example was aligned to the finance and accounting industry, whereby a mixed-sector VET and a dual-sector HE provider collaborated to design and offer the integration. The opportunity was recognised by staff in each institution rather than being an initiative of, or developed in close collaboration with, industry. Nevertheless, each provider had its own close ties to the industry in question. The collaborators did not receive dedicated funding to undertake the design. While it would appear that other examples of the consecutive model required dedicated resourcing to develop the integration (in particular, preparing mapping documents), the HE provider in this example was able to draw on substantial experience in developing similar arrangements.

One of the HE institution informants explained that the institution's particular expertise in this area could be traced back to a 2010 state government program designed to improve regional student access to HE. Funding obtained under that program facilitated the development of a number of articulation and credit arrangements with VET providers. Through the experience of numerous collaborations and the process of repeatedly mapping VET training packages against HE curriculum, the HE provider was able to approach the current example with confidence and skill. This may explain why, without a substantial initial outlay, the collaboration was established and has been successful to date. The VET provider in this example was also an innovative institution, with experience working with HE providers. Significant expertise from both sides was brought to the collaboration. It should be noted that finance and accounting industry standards had to be met by both the VET and HE components of the integration, but compliance had been already achieved before the integration was initiated, and the modularity of the components meant that compliance was not undermined by any aspect of the integration.

Students enter through a Certificate IV in Accounting and Bookkeeping, which articulates to a Diploma of Accounting, both delivered by the VET provider. Students then move into the second year of a bachelor degree in accounting. Towards the completion of their advanced diploma studies, students are given the option of progressing to the degree. The degree, which is valued by industry, creates a clear sequence of relevant qualifications for interested students, through which a small number (including international students) were currently progressing. Informants from both institutions were confident that student numbers would grow. Students in the advanced diploma were well informed about the progression option, which was made more attractive by the fact that a select number of qualified VET institution staff also taught subjects in the degree component of the integration on the HE provider campus. This arrangement was facilitated by a high level of trust between staff from both providers, which was

reinforced by the practice of VET staff teaching in the degree program. The informants described the strong awareness evinced by involved staff from both institutions about the delivery and assessment practices of the other. The initiative was further strengthened by explicit staff attention to the problem of transitioning from VET to HE styles of delivery. Students were well supported through the transition, while delivery and assessment practices in the degree component of the integration were shaped by long experience in similar arrangements. The teaching and assessment style adopted within the degree component could be described as innovative and perhaps closer to VET delivery and assessment practices than is typical in HE providers.

The other ‘consecutive’ example was aligned to the early childhood education and care (ECEC) industry, with a diploma qualification leading into a bachelor degree at second year level. This example is wholly based in a dual-sector institution, although the VET and HE parts of the provider had been distinct operations, at least with regard to ECEC qualifications. The informant indicated that the impetus for developing the integration was a desire on the part of the institution to be an authentic dual provider, one focused on benefiting both students and industry through innovative qualification design. Industry demand for post-diploma-qualified workers was reported, especially in regional areas. The informant was personally involved in the initiation and design of the integration in 2016 and explained that the institution had actively supported integration initiatives at the time, which allowed substantial resourcing to be directed to the example. According to the informant, a senior staff member with a detailed understanding of both the VET and HE sectors was taken offline for 12 months to develop the integration, with the bulk of the effort devoted to the mapping process and documentation.

The mapping process not only had to satisfy the requirements of the higher education regulator (Tertiary Education Quality and Standards Agency) but also the ECEC industry regulator standards (Australian Children's Education and Care Quality Authority), compounding the complexity of the design. The informant conceded that in the current economic climate the institution would be unlikely to fund such an exhaustive process again.

Students entering the diploma program already possess a certificate III qualification in ECEC. Most are mature-aged, have experience working in the industry, and often have busy family lives. The informant emphasised the need to take this background into account when the integration was being developed, with particular attention given to easing students into the demands of the HE qualification. Students in the diploma program are made well aware of the degree option and the advanced standing they would receive on the basis of completing their diploma. One difficulty created by compliance with the industry regulator standards is that additional hours of work placement are required on top of the diploma work placement quota to enable students to be awarded advanced standing in the degree. The informant explained that the extra work placement requirement – unpaid hours of work in ECEC centres – was a significant disincentive for the students, who are often part-time and already employed in centres.⁶ As a result, relatively few students would opt for the degree. The majority of graduates from the diploma went into the workforce instead of continuing their studies.

6 ‘Supervised professional experience’ as defined by the Australian Children’s Education and Care Quality Authority (ACECQA) cannot be on-the-job experience or unsupervised work experience. Thus, paid work undertaken by students in ECEC centres cannot count toward mandatory supervised professional experience placements.



Characteristics of sustainable models

The overarching question of whether, and how, integrated qualifications could be implemented more broadly may be answered in a qualified way by this research. As the case studies indicate, high integration models are difficult to construct and sustain. The highest category of integration in our typology – the embedded model – included only three examples, and the one that features as a case study in the research had already been discontinued by the time the interview with the key informant was conducted. Representatives from only two examples of the next highest integration type – concurrent – were available for interview. Of the examples, one appeared sustainable and the other, although it was still offered, was perhaps at risk due to low enrolments. A larger number of the next highest integration type – the consecutive model – were identified. Most of these appeared to be sustainable.

The first phase of the project encountered much larger numbers of the lower integration model and it appears that this model is largely sustainable. Lower integration arrangements have often been the focus of investigations into pathways, credit and articulation arrangements, stretching back at least to the PhillipsKPA project of 2006 and most recently researched in a comprehensive way by the Ithaca Group (2018).

Curriculum mapping

Across the three high integration models, VET and HE content mapping processes were common. ‘Mapping’ in this setting can be defined as the analysis of training package content (units of competency and qualification rules) alongside analysis of HE course and program content to identify and distinguish overlapping and non-overlapping content. The obvious reason for mapping being a common feature of high integration models is that these integrations are subject to scrutiny by regulators from two sectors. Mapping documentation – the focus of regulator attention – must be intelligible and persuasive at two distinct levels and sustainable through changes from either regulator. The research shows that the mapping process is extremely demanding and can be expensive.

What made the mapping process such a challenge in all of the high integration examples was the lack of a common measure for the representation of knowledge and skills between training package content and HE course and program content. Informants discussing mapping spoke of distinct ‘languages’, and ‘translation’ was frequently used to describe the process. Uncommon skills, knowledge and experience were required to effect the translation. The greatest difficulty in the process, as reported by informants, was translating from training packages. It seemed that the boundaries of units of competency were defined by the task for which certain knowledge and skills were required, whereas in the HE content, sets of skills and bodies of knowledge each had their own structures and were not intrinsically bound together. The common denominator for the process remained skills and knowledge, which meant the training package content needed to be ‘de-tasked’ to determine what content could be mapped to HE content. Because the HE content was not subject to task-based boundaries, the content could be more readily translated. Staff fluent in the distinct languages of VET and HE were required for the translation work, and they also needed expertise to de-task training package knowledge and skills. The challenges associated with the mapping required for the higher integration examples explain the expense and expertise required for production of the documents.

The incidence, and significance, of the mapping process across the three higher integration models prompted a revision of the typology to include explicit reference to the process. Notably, similar mapping processes were not evident in the lower integration model, explaining the fact that no

guarantees of amount or kind of credit were associated with the examples of the ‘endorsed’ models reviewed in the first stage of the research.

Relationships

Another characteristic of the sustainable examples were the good relationships between the various staff representing the VET and HE parts of the integration. Informants not only described the need for the teaching staff of the VET and HE components to have mutually respectful relationships in terms of ongoing collaboration, but also the importance of securing understanding and goodwill from other institutional staff. Moreover, the sustainable examples were characterised by active support from leadership. Informants described a constant challenge with respect to institutional support, with staff outside the collaboration sometimes offering a negative evaluation of the other sector. For instance, ‘academic snobbery’ was cited as a recurrent problem for collaborators based in HE institutions. The most sustainable examples were characterised by relations of trust between the staff of the two integration components, with support from institutional leadership. This factor was as important for the dual-sector institution examples as it was for examples involving a partnership between two single-sector providers. Four of the five examples presented were characterised by respect and support. In contrast, the manufacturing example experienced low commitment from one side of the relationship, and this situation may have contributed to the demise of that integration.

Industry relevance

Another characteristic of the sustainable examples was the industry relevance of both the VET and HE components. All of the higher integration examples possessed at least one component that was recognised by industry; that is, as a requirement for entry into the industry or a part of the industry. The most sustainable of the examples were characterised by industry recognition of both VET and HE components. The two concurrent examples of hospitality and management and animal care and the consecutive finance and accounting example were all sustainable because each component was utilised by industry. However, in relation to the highest integration example – the embedded manufacturing example – it appears that both components were not equally recognised by the industry. This is somewhat counterintuitive, since it was an initiative of industry leaders. That said, the actual process of development and the potential implementation of that example seem to have converted industry stakeholders to the view that the integration was not in fact useful. This example highlights a difference between industry ‘thought leaders’ (who were instrumental in shaping the project) and employers (who were expected to supply and support the students). In contrast, industry and employer support was high for the concurrent animal care example, which is probably the most sustainable of the integrations investigated for this project.

Student acceptance

A further characteristic of the sustainable higher integration examples was student acceptance. This factor encompassed a number of elements, including scaffolding of the integration, the location of each of the component parties and industry demands on students.

The sustainable examples were characterised by explicit measures to support students in their transition into the HE style of delivery and assessment. The concurrent animal care example involved deploying the considerable support resources the HE provider had developed for all of its students to ease the transition to HE study for VET–HE students, while the consecutive finance and accounting example involved employing staff who worked across the VET and HE components, creating a sense of continuity

for the students. Sound collaboration among VET and HE staff was also a factor in the concurrent hospitality and management example. In the consecutive finance and accounting example, continuity and scaffolding were further enhanced by the delivery of aspects of the VET component in the premises of the HE provider, while geographical co-location was a factor in the sustainability of the concurrent hospitality and management and the consecutive early childhood examples.

Typical industry demands on students were problematic for both the embedded manufacturing and consecutive early childhood examples. In the embedded case, work requirements for apprentices made engagement in the HE component of the example challenging, while the early childhood consecutive example presented the prospective students who were already employed in the ECEC industry with the economically unacceptable burden of additional unpaid work placements.



Rationale for integration

The history

In Australia the integration of the two tertiary education sectors is a workforce development policy goal with considerable appeal. In the decades since national training reform – a shift that had the unintended consequence of sharpening the differences between VET and HE – policy-makers have looked for ways to overcome the difficulties faced by people who want or need to combine the outcomes of VET and HE study to enhance their competitiveness in the labour market. A target in policy work has been establishing credit arrangements between VET and HE qualifications, with attention to this area from at least the Finn review (Australian Education Council Review Committee 1991), which introduced the term ‘pathways’ to describe such initiatives. Since that time, a range of reports, research projects and policies have examined and promoted pathways that take qualifications as the vehicle for facilitating movement between sectors. For instance, strategy documents of the then Australian National Training Authority (ANTA; 1998, 2003) actively promoted pathway initiatives, but acknowledged ‘barriers’ to further growth between VET providers and universities. Later research by PhillipsKPA (2006) developed case studies of pathways and distinguished various types, these including ‘integrated cross-sector award arrangements’, which involve:

designing new or modifying existing qualifications to create an integrated or defined qualification pathway in which one qualification builds on or is linked directly to the other and in which credit is built into the related awards. Integrated award arrangements involve a collaborative curriculum development process between both the VET [VET] and higher education partners in the arrangement.

(PhillipsKPA 2006, p.33)

The PhillipsKPA (2006) project identified a range of ‘impediments’ to developing arrangements such as this, which include different funding and accountability models for each sector; attitudes and culture producing friction between them; administrative issues; differences of curriculum, qualification design and assessment practices; and lack of resources to support initiatives.

While the PhillipsKPA (2006) report canvassed policy and institution-level issues, the student perspective on pathway arrangements was investigated by Harris, Rainey and Sumner (2006). A ‘student movement typology’ was advanced, which included the categories of ‘interest chasers’ (shifting interests determine movement); ‘career developers’ (coherent planning); ‘career mergers’ (from initial exploration to focused development); ‘forced learners’ (external demands lead to changes); and ‘two-trackers’ (planning for an alternative career). In terms of the pathway arrangements described by students, Harris, Rainey and Sumner (2006, p.40) concluded that:

while not necessarily seamless, sectoral transitions and pathways appear functional and effective and are utilised by many young people. From the stories of these participants, it seems that the process could be enhanced by targeted, accessible and accurate information and by the provision of more career advice.

The student perspective indicates that individuals are capable of navigating the binary structure of the tertiary system for their own ends, particularly if adequate information is provided on offerings and career implications.

The value of pathway arrangements between VET and HE providers was reiterated and reconceptualised in the Bradley review (2008), which had as one of its key objectives, ‘a broad tertiary education and training sector’, in which the distinctive contributions of VET and HE are acknowledged (2008, p.206). The review set out six ‘principle characteristics’ of a fully effective tertiary system, one of which was:

a capacity for the whole system to provide integrated responses to workforce needs for industries and enterprises, including those in specific localities and communities like outer metropolitan and regional areas, where there is significant population growth, low levels of educational attainment and participation and uneven provision (2008, p.179).

A project launched by the NSW Government in 2010 incorporated this ‘tertiary sector’ perspective of whole-system response to workforce development needs (PhillipsKPA 2014). From 2016, the NSW Tertiary Pathways Project initiated a number of pilot arrangements between VET and HE providers, with close industry involvement. The project aimed to ‘go beyond traditional credit transfer arrangements to develop seamless progression through VET and higher education qualifications, with entry and exit points as needed’ (New South Wales department of Education 2018, p.3). Four pilots, reflecting three distinct ‘pathway models’, were developed:

- a higher apprenticeships and traineeships model, which ‘extends traditional apprenticeships or traineeships to higher level qualifications up to a university degree’ (p.6)
- a degree apprenticeships and traineeships model, which ‘embeds a VET qualification and an apprenticeship within a bachelor degree’ (p.6)
- an integrated tertiary pathways model, which ‘creates a seamless transition for students by co-designing new qualifications that integrate higher education and VET content for the first time’ (p.7).

Government information about the pilots indicates that only one proved to be unsustainable at that time.

In related work, the NSW Government commissioned a review of VET in that state, which made recommendations that included the establishment of a new ‘tertiary institution’ (NSW Institute of Applied Technology), which would address the challenges associated with the binary structure of post-school education (Gonski & Shergold 2021). In its case for establishing a new kind of institution, the review referred to the ‘increasingly outdated distinction between higher and vocational education’, arguing that:

Most jobs need a mix of practical and theoretical skills. The structural bifurcation between two different types of tertiary study – higher and vocational education – often hinders people in gaining the range of employability capabilities that they need for success (2021, p.6).

The proposed institute would be ‘built around the career aspirations of students and the skill needs of employers’ (2021, p.11). Noteworthy in this proposal is placing student and industry interests at the centre of institutional activity rather than attempting to forge links between offerings of the different sectors.

A different solution to the binary challenge was conceptualised by Wheelahan, Buchanan and Yu (2015). In their ‘vocational streams’ model, the emphasis is on occupations as the guiding principle for determining which education and training options are relevant. The vocational focus is complemented by ‘capabilities’, centred in individuals. The capabilities approach goes beyond competencies by embracing individual agency and empowerment as much as technical and employability skills.

This occupation- and person-centred approach to tertiary provision may be the way of the future and resonates to some extent with Gonski and Shergold’s (2020) proposal, the difference being that Wheelahan, Buchanan and Yu’s model takes occupations rather than industry and employers as the complement to a student focus. It would require considerable change to the way the system works in Australia to adopt the vocational streams and capabilities approach, and as such goes beyond the scope of the present research. However, some findings of this project suggest that where industry, employers and students recognise the value of combining VET and HE qualifications, the binary structure of post-

school education and training is indeed reduced to the level of inconvenience rather than functioning as a barrier. A glimpse of what a ‘fully effective tertiary system’ becomes possible.

The binary structure of post-school education and training

At present, the challenge of the binary structure in Australia’s tertiary system is exacerbated by the operation of two regulatory regimes: one for VET and another for HE. The Australian Skills Quality Authority (ASQA) oversees the VET component of the field and the Tertiary Education Quality Standards Authority (TEQSA) the HE component. ASQA’s work is guided by the revised version (2015) of the eight legislated Standards for Registered Training Organisations (RTOs) (Commonwealth of Australia 2021b). TEQSA draws on the Higher Education Standards Framework (Threshold Standards) 2015 to shape its work (Commonwealth of Australia 2021a).

While the regulators share a common interest in quality measured against standards of provision, their guiding frameworks each have unique implications for program design, delivery, assessment and teacher/trainer qualifications. The support document for this research details some of these implications but they can be summarised briefly here. VET programs all conform to a competency-based model, which takes employment-related tasks and roles as the focus and specifies skills and knowledge to the extent that they are relevant. In contrast, HE programs draw on multiple models, mostly deriving from the structures of disciplines or individual professional and vocational association standards (which themselves can be expressed and addressed in diverse ways). HE programs are often oriented to bodies of knowledge and skills rather than specific occupational roles and tasks, and it is this feature of HE that is linked to effective development of ‘soft skills.’

Delivery and assessment follow these approaches to program design. VET programs can be short or long, depending on the task or role of focus, with learning strategies frequently determined by the need to minimise time away from employment. HE programs are generally built around fixed and usually longer periods of time for learning, with the consequence that delivery methods can more readily address whole bodies of knowledge and skills. All assessment in VET strictly conforms to competency-based principles, which stress gathering and judging evidence of demonstrated competency. In HE, assessment principles, techniques and practices are as varied as the disciplines and professions served by HE programs.

The qualifications of teachers and trainers in each sector are also varied. In HE there is no national mandate for a teacher qualification, although government policies have promoted adoption of a base-level credential at a graduate certificate level in public universities. However, teachers in HE tend to be employed for their expertise in specific disciplines and professions and, depending on individual institutional policy, may not be obliged to undergo teacher training. It should be noted that across the sector a policy of student evaluation of teaching is in place, which compels publicly funded institutions to support and improve teaching quality. In VET, student evaluation of teaching and training is also practised, but in addition, strict training requirements apply, with all practitioners required to hold a Certificate IV in Training and Assessment or, in explicitly circumscribed situations, they may hold a set of competencies from the certificate or be under direct supervision of a qualified trainer. In addition, standards for the VET sector require regular demonstration of ‘industry currency’ and currency in teaching, training, and assessment methods.

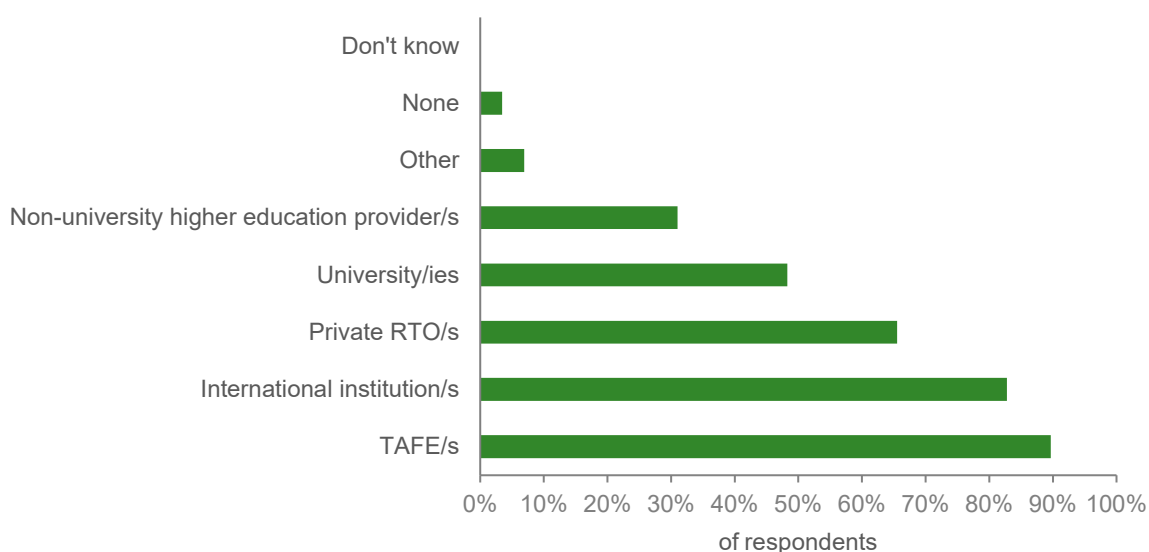
It is not surprising, then, that learner experiences of teaching, training and assessment are different across the two sectors, and that the nature and structure of learning content is also different. The work of the regulators both mirrors and reinforces those differences, in the sense that models of program design (for example, competency-based training) were in place prior to the establishment of the regulators, and they reinforce, in the sense that they view quality in terms of the same principles (for

example, ASQA seeks a quality competency-based system). The work of the regulators thus contributes to (and sheds light on) the real experience of a binary environment by adults who seek to combine the benefits of each.

The AQF and the binary structure of the tertiary system

Interest in integrating the sectors to support student movement between them therefore contends with the multiple implications of a dual regulatory environment. In this context the Australian Qualifications Framework (AQF; 2013) comes to the fore as a reference point for cross-sectoral pathways design and development. The AQF serves to classify pathway arrangements and makes a policy statement on the award of credit at different qualification levels, which is recognised by the regulators. Recent work on credit pathways for the 2019 AQF review (Expert Panel for the Review of the Australian Qualifications Framework) revealed diverse institutional practices at the boundary between VET and HE and inconsistency in and confusion about implementation of the AQF credit policy (Ithaca Group 2018). However, a significant number of arrangements were reported, both within sectors (for example, in VET through the range of certificates I to III) and across sectors. The cross-sector arrangements, principally from diploma to bachelor degree qualifications, were most prevalent in the areas of management and commerce, education and health (Ithaca Group 2018, p.44). The report details responses to a survey that included questions about institutions with which HE providers had formal articulation agreements. Figure 3 highlights that most agreements are with TAFE (technical and further education) institutes (over 80%), although over 60% reported agreements with private RTOs.

Figure 3 Institutions partnered with by higher education providers



Source: Ithaca Group (2018, p. 44), based on a provider survey.

The amount of pathway activity described in the report points to the influence of policy work to facilitate student movement across sectors, particularly in some industry areas.

Notably, reform work in recent years acknowledges some weakness in the current AQF (2013) model, raising questions about its efficacy as a cross-sectoral framework for informing efforts towards integration. The AQF review (Expert Panel for the Review of the Australian Qualifications Framework 2019) explained that, although the AQF ‘sets the overall framework for the design and quality assurance of education and training in Australia’ (p.8):

Factors such as funding, governance, regulation and institutional responsiveness have far greater influence on education and training than the AQF. Qualifications also sit within broader economic, social and cultural contexts, which can strongly influence perceptions about their standing and expectations about what they should provide (2019, p.8).

Nevertheless, the Expert Panel argues in its case for reform that ‘the relevance, effectiveness and utility of the AQF is arguably more important today than when it was first implemented as a loose, largely sector based framework in 1995’ (2019, p.8). The value of an effective AQF lies in its provision of a ‘common language for the design and description of the types of Australian qualifications and the relationships between them’ (2019, p.8), suggesting that a reformed AQF has scope to facilitate greater integration between the VET and HE sectors, potentially leading to a range of benefits for students, occupations and industries in instances where their development and skills needs straddle the current binary structure of the system.

A contemporary view

The project highlights the difficulties of developing and sustaining higher integration models. But instances of the lower integration model – the endorsed model – appear to be much more numerous (Ithaca Group 2018), suggesting greater sustainability (as no credit guarantees are offered by institutions), although there are no data available to provide an indication of the longer-term viability of these arrangements. Given that the mapping process is not required for the lower integration model, nor is initial or ongoing industry support for and recognition of the qualifications, these arrangements should be less expensive and of lower risk. Where conditions favour higher integration models (for example, support for mapping), we could expect more to become available, although sustainability may be a persistent issue. This project suggests that greater integration of qualifications may not be the best way to promote greater integration of VET and HE.

The binary structure that currently shapes the post-school education and training landscape creates a range of problems for individuals, communities and industry. The literature reviewed for this project underlined these problems, while the tertiary education experts interviewed for this project reiterated and nuanced the argument for integration. Of the issues associated with the binary model, a major one is the lack of parity of esteem between VET and HE. Recent research by Billett, Choy and Hodge (2020) and Gore et al. (2018) suggested that young people, their family, peers and teachers value the sectors differently in their decision-making about post-school education and training. The binary of VET and HE imposes stark choices on school leavers, reinforcing perceptions of difference, potentially leading to skills imbalances in the workforce.

A second issue is evident at the level of individuals who negotiate careers in the ‘fourth industrial revolution’. Building the skills and knowledge to succeed in this environment is an ongoing challenge and will call upon well-developed career management competencies. The future of work (Avis 2018) does not now, and is unlikely to again, involve pre-vocational training for a single role, with no ongoing new training. Stronger alignment and integration between the sectors can facilitate individual skill and knowledge development across contemporary careers in a future of work that will require responsiveness to change.

A third issue relates to the opportunity lost to supply industry with the skills and knowledge unique to the middle range of qualifications that typically span the offerings of VET and HE providers (Moodie et al. 2015). Currently, the VET and HE sectors offer a full suite of programs with contiguous and sometimes overlapping offerings at the mid-range band of qualifications (diploma through to bachelor degrees). However, developing deep and coherent knowledge and skills across the fault line between the sectors is

problematic. Stronger alignment and integration between the VET and HE sectors potentially unlocks the full benefits of mid-range qualifications for industry and the economy more broadly.

A picture illustrating the context of integration emerges from data gathered through the qualitative surveys and interviews with tertiary education experts and institution representatives. Informants stressed the significant differences between the two sectors dominating Australia's tertiary landscape. Indeed, at this juncture it may not be possible to speak of a 'tertiary system'. Rather, the VET and HE sectors are regarded as separate now as they have ever been. Yet the perception of separateness does not necessarily mean that each sector has clearly differentiated purposes. Looking back to the Bradley (2008) review's vision of a single tertiary system, with clearly distinguished and valued VET and HE components, it can be proposed that policy developments since that time may have served to erode this vision and reduce clarity about the specific contribution of each. Without a clear distinction in their purposes, perceptions of the separateness of the two sectors seem heightened in relation to that band of the AQF occupied by 'mid-level qualifications' (Moodie & Fredman 2013), where there is some overlap of VET and HE offerings. On this point, the research confirms the main conclusions of Fowler (2017), who described confusion and contestation over the boundaries of the sectors. As one of the informants in this study explained:

effectively integrated higher education and VET qualifications is ... not necessarily a recipe for collaboration and seamless integration in some ways, if the regulatory frameworks can't even get people within a single institution to sort of play ball. And what hope have you got for very competitive dynamics across the entire [tertiary] sector? (Tertiary expert)

To these conclusions, the present research notes that debate about a tertiary system in Australia is made more problematic by the existence of separate, but not entirely distinguishable, sectors.

The concept of integration was broadly welcomed by stakeholders as a term with the potential to inform and advance thinking about a tertiary system:

I think integration in the tertiary sector ... making a more 'tertiary sector' than 'higher ed' and 'VET' would be a good thing, I think that articulation needs to happen in both directions as well, so you know people need to be encouraged to go ... I think it's a positive move ... a good thing, I think it helps students on a pathway of continued learning as opposed to just one off qualifications here and there. (Tertiary expert)

Integration was considered to resonate strongly at the institution level. Stakeholders envisaged that closer collaboration between VET and HE at an institutional level – between single-sector institutions and within dual/multi-sector institutions – was desirable:

having that infrastructure, facilitating that [is] much better – so having the funding and the regulatory systems and that sort of thing more integrated, so that the two are working together as opposed to against each other. (Tertiary expert)

One benefit envisaged was an increase in understanding among staff about the nature and benefits of the other sector. According to one survey respondent, an advantage is 'clearer communication between the two as well as the clientele they are servicing'. A lack of this kind of understanding was seen by stakeholders as an impediment to effective cooperation between the sectors, while increasing understanding broadened the scope for innovation arising from the sharing of education and training practices, potentially improving the quality of provision within the collaborating institutions.

Students were believed to be the main beneficiaries of integration, with some consensus that those who had developed their knowledge and skills in both VET and HE studies were advantaged in the labour market:

industry wants people who have skills and knowledge, and the closer we can align VET and the university sector, the more students we produce who've got that skills and knowledge that industry want. (Case study representative)

These advantages were frequently framed in terms of practical skills in combination with problem-solving or 'thinking skills'. It was considered that study in one education sector alone could not give rise to this kind of capability. For some stakeholders, the perceived strengths of individuals who had studied in both sectors prompted the conclusion that integrated qualifications should be more widely available. Such strengths could be acquired outside integrated arrangements, however.

Another advantage for students was increased recognition of the role of lifelong learning. It was acknowledged that succeeding in both VET and HE settings was a significant accomplishment, one that would enable a person to more successfully navigate the ongoing skills and knowledge challenges associated with a rapidly changing labour market (that said, it was noted that students might not be aware that separate sectors collaborated to offer integrated qualifications). As one of the tertiary experts explained in relation to 'guaranteed pathways' (either endorsed or consecutive models) at her own dual-sector institution:

Students started with cert. III and then they had credit and the guaranteed pathway into the final year of the bachelor. So there's two parts of this. Here there's a guaranteed pathway, but then is it with credit or without credit? So from the cert. IV to diploma, yes guaranteed pathway, but no credit. From the diploma to the associate degree, yes, guaranteed pathway and credit and then from the associate degree into the bachelor's degree. Now what that did for that ... particular individual was it means that the exit point, as I said, gave them employment opportunity which allowed them to keep studying as an ... adult. But the exit points provided surety and an escape hatch for the student.

(Tertiary expert)

Finally, integration holds out the promise of more informed and efficient development of the emerging education and training needs connected with a changing labour market. Where VET and HE institutions collaborate, there is a greater chance that existing skills and knowledge will be recognised, repetition of content reduced and costs ameliorated for lifelong learners.

The stakeholders were also asked to consider the benefits of integration to industry. As a group, the informants were ambivalent about industry benefits. It was commented that industries tend to draw on graduates from one or the other sector, with little apparent concern that very few integrated qualifications relevant to their area are available. The suggestion was also made that some employers do not necessarily value qualifications, so the prospect of integrated qualifications would not improve their attractiveness. A related comment was that industry is not necessarily interested in the detail of qualification design and would therefore not appreciate the value of initiatives around qualification integration:

Very few people will understand the mechanics of regulation and financing and operations of the university and operations of a TAFE and of the expectations of cultures and staff and students within..., but the mechanics of that are incredibly complicated, you know it's next to impossible to sort of specify here's what we'll do. (Tertiary expert)

Finally, it was noted that integrated qualifications would only be useful in some industry areas and would not necessarily be widely available or in any numbers. Integrated qualifications may only be viable as niche offerings.

The relevant literature and the tertiary education experts interviewed for this project offer a compelling argument for pursuing the goal of stronger alignment and integration between VET and HE. While the

project indicates that greater integration of qualifications may not be the best way to promote greater integration of the two sectors, some models of integration appear sustainable and have the potential to serve as one approach in ongoing integration efforts. However, the research from this project does suggest that higher integration models may be more widespread and sustainable when the following conditions are met:

- Providers can be supported with the expertise and resources to undertake mapping processes.
- Providers and their staff in the VET and HE sectors trust and value each other.
- Industries and employers value both the VET and HE qualifications in related fields.
- Students find the demands associated with integrated offerings acceptable.



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Appendix

Appendix A: Methodology

There were three stages to the research:

- a desktop-based exploratory stage to identify examples of integrated VET and HE qualifications
- interviews with staff in institutions offering identified integrated qualifications
- a stakeholder survey and targeted interviews with tertiary experts.

Desktop search

The first stage of the project involved a thorough search of Australian VET and HE institution websites to identify instances of integrated qualifications. The design of the desktop search was based on the literature, which had provided an overview of previous pathway arrangements and mechanisms, including articulation and credit transfer arrangements. Several different phases of the search were required, as the literature indicated that there was no consistency in language across the country or the sectors. Having defined the scope in the initial background work of the project, the focus of the search was to find examples of models of integration which were consecutive, concurrent or embedded. Examples of the advised or endorsed models were noted as well, but were not a focal point of enquiry.

The desktop search included open and systematic elements. The subject of the open search was any information on offerings of integrated qualifications that were locatable on the internet. Researchers used a tool to search across the internet to look for specific examples of integrated qualifications, using key words and recorded instances of integrated qualifications for a second search to assess and determine the relevance of the link and to determine whether there was a possible integrated qualification to investigate. Many hundreds of websites were visited and 118 substantial links to integrated qualifications were found. From these, 33 links of interest were identified, which could be progressed further.

The systematic element of the desktop search was focused on ensuring that there were no significant instances of integrated qualifications that had been missed by the open search. This second phase of the desktop research systematically targeted websites of the public and private universities, private RTOs and TAFEs, multi-state non-university HE providers and multi-state RTOs. The targeting of 64 distinct websites for close analysis was undertaken to manage the scope of the project, since an analysis of every non-university provider and RTO was beyond the scope of the project, particularly as this technique was meant to supplement the open search as described above.

The methodology used drew on the work of Hite and Railsback (2010), who defined and explained methodical systems for course provider website analysis. This analysis technique drew in both content and characteristic elements of provider websites and provided a systematic way to examine the top-level content on the website: the courses available/future students' pages, and then, using the provider search facility, to search for three key words 'integrated' 'dual' or 'pathways'. Initially the word 'credit' had also been included but this returned too many generic results of each vocational or higher education course on the institution's website and so was not continued.

During these searches pages of interest were saved in pdf form and extracts from pages were copied verbatim into a data-collection spreadsheet, from which an analysis of common language about integrated qualifications was made possible. As part of the desktop search, the websites of each public and private university, TAFE and multi-state RTO were searched and marketing materials which referred

- industry representatives in sectors identified through the literature review as having an interest in integrated qualifications
- large businesses with a documented interest in this area
- existing partnerships between HE and VET providers (including examples of partnerships enabling pathways from VET in Schools to HE).

Fifty-three people were invited to participate in an interview in relation to 36 possibly in-scope examples, which had been identified through this process. They were to be interviewed about their understandings of integrated qualifications, their experience of integrating qualifications, and the seven key challenges to integration, which had been identified in the literature review.

Examples were logged and details of the examples were recorded to enable the research team to assess which model of integration was the best fit. The in-scope examples (consecutive, concurrent or embedded) numbered 17.

Case studies were developed with five practice examples: one embedded, two concurrent and two consecutive examples. As there were numerous examples of the consecutive model, two were chosen based on Gerring's (2007) advice on case studies ideally constituting the most extreme cases and were selected to show particularly illuminating parts of integrated qualification delivery or the critical challenges that had impacted on the design of integrated qualifications. Appendix B contains the interview questions for these interviews.

Survey and interviews: industry and national tertiary experts

The question of integrated qualifications is not a new one and many people who are not directly working in tertiary institutions have an understanding of their benefits to industry, students and providers. Therefore the final stage of the research was designed to gather the views and understandings of those not directly involved in the design, development or delivery of integrated qualifications.

There were two methods of data collection for this stage. The first was a short survey and the second was a series of individual interviews (see appendix C for survey items and appendix D for interview questions). A short survey was sent to a broad selection of stakeholders, sourced from public listings, particularly VET sector industry reference committees. The survey asked questions about the respondent's understanding of integration, the current fit of products on offer and any examples of integrated VET–HE qualifications the respondent had encountered. Over 100 survey invitations were sent and recipients were advised to forward the survey onto relevant colleagues if they were more appropriate. Reminders were sent, with the survey open for a four-week period. Thirty-five responses were received. The survey could be completed anonymously but there was a final, optional question which invited respondents to volunteer for an interview about integrated qualifications if they had more information to share. Five respondents volunteered to be interviewed and three of these could be arranged within the research timeframe.

In total there were 13 interviews of stakeholders in this stage – the three who volunteered after completing the survey and 10 tertiary experts. The tertiary experts who were interviewed were sourced through referral from NCVET, identified from the literature review, and from the researchers' existing knowledge. They came from businesses, business associations, were HE policy experts and had conducted academic research on VET and HE. The interviews asked overarching questions about integration and also asked for comments on possible challenges with integration, referring to those identified in the literature. The interviews with these industry and other tertiary stakeholders also asked for their recollection of any possible examples of integrated VET and HE qualifications and how they had fared.

The research was conducted in accordance with ethical guidelines set down by the Griffith University Human Research Ethics Committee (HREC). The HREC reviewed and approved the study (GU Reference: 2021/157).

Appendix B: Interview questions for staff of institutions that offered integrated qualifications

Orienting questions:

- 1 What do you see as the benefits of stronger alignment between the two sectors VET and higher education?
- 2 What would the role of integrating VET / higher education qualifications be in stronger alignment between the two sectors VET and higher education?
- 3 What could the benefits of integrated VET and higher education qualifications be? (e.g. for students or for industry / employers or providers)
- 4 Why was this integrated qualification needed?
- 5 What was the process of getting it started?
- 6 When was it initiated? When was it offered to students? Is it still being offered to students?
- 7 Basic components? E.g.
 - UoC / SS / Qual
 - Units / Program
- 8 How was/is this program presented as a benefit to students / to industry / to the institution?

Questions about the integration process:

- 1 VET courses are based on units of competency, whereas higher education courses are more institution-specific and knowledge-based. What challenges did these different approaches pose in the process of designing the qualification pathway? How were they managed?
- 2 VET courses are often shorter than higher education courses. Different learning activities and approaches are evident in courses from each sector. What challenges - if any - did different learning and teaching practices pose for the success of the qualification pathway? How were they managed?
- 3 VET courses and higher education courses are often assessed in different ways. Did these assessment differences pose any challenges to the design of the qualification pathway? How were they managed?
- 4 Teacher and trainer qualifications are different for the VET and higher education sectors. Did differences in these requirements pose any challenges for the qualification pathway? If so, what were the challenges and how were they managed?
- 5 VET and higher education providers are subject to different standards and auditing processes. Did these differences pose any challenges for the design or implementation of the qualification pathway? If there were challenges, how were they managed?
- 6 Courses are funded differently in VET and higher education. Did any challenges follow from these funding differences for the qualification pathway? If there were, how were they managed?
- 7 VET and higher education courses are often marketed to very different audiences and in different ways. How was the qualification pathway marketed? Who was targeted? What was the competition?

Appendix C: Survey items

Respondent organisation

This section seeks details of the respondents' organisation including industry and education and training.

- 1 What organisation type do you represent?
 - a) Sole proprietor trader
 - b) Organisation with 2-19 employees
 - c) Organisation with 20-199 employees
 - d) Organisation with over 200 or more employees

- 2 Which industry division does your business mainly fit into? (Select one)

These are ANZSIC 2006 DIVISION CODES AND TITLES

- a) Agriculture, forestry and fishing
- b) Mining
- c) Manufacturing
- d) Electricity, gas, water and waste services
- e) Construction
- f) Wholesale trade
- g) Retail trade
- h) Accommodation and food services
- i) Transport, postal and warehousing
- j) Information media and telecommunications
- k) Financial and insurance services
- l) Rental, hiring and real estate services
- m) Professional, scientific and technical services
- n) Administrative and support services
- o) Public administration and safety
- p) Education and training
- q) Health care and social assistance
- r) Arts and recreation services
- s) Other services

Education training engagement

Questions in this section draw on your knowledge of your industry, and what licensing or qualification requirements there are to work in your industry.

- 3 Which kinds of providers are you in regular contact with?
 - a) TAFE
 - b) RTOs
 - c) Universities
 - d) Other higher education providers
 - e) Short course providers
 - f) Online MOOC providers

- 4 What is the most usual qualification level of staff in the most relevant part of your industry?
 - a) Certificate I-III
 - b) Certificate IV
 - c) Diploma
 - d) Bachelor degree
 - e) Graduate Certificate / Diploma
 - f) Master degree
 - g) Not sure

- 5 Do you take on any apprentices or trainees?
- 6 Do you take on any new graduates from higher education?
- 7 If yes you do take on new graduates from higher education - Do you have a formalised graduate training program?
- 8 Which industry training areas does your business / organisation engage with - tick all that apply
- Aboriginal and Torres Strait Islander Health Worker
 - Aerospace
 - Aged Services
 - Agriculture and Production Horticulture
 - Ambulance and Paramedic
 - Amenity Horticulture, Landscaping and Conservation & Land Management
 - Animal Care and Management
 - Aquaculture and Wild Catch
 - Automotive Allied Industry
 - Automotive Heavy Vehicle
 - Automotive Light Vehicle
 - Automotive Strategic Industry
 - Automotive Vehicle Body Repair
 - Aviation
 - Business Services
 - Children's Education and Care
 - Civil Infrastructure
 - Client Services
 - Coal Mining
 - Community Sector and Development
 - Complementary Health
 - Construction, Plumbing and Services
 - Corrections
 - Culture and Related Industries
 - Dental
 - Direct Client Care and Support
 - Disability Support
 - Drilling
 - Education
 - Electricity Supply Generation
 - Electricity Supply Transmission Distribution and Rail
 - Electrotechnology
 - Enrolled Nursing
 - Extractive
 - Financial Services
 - First Aid
 - Food, Beverage and Pharmaceutical
 - Forest Management and Harvesting
 - Furnishing
 - Gas
 - Information and Communications Technology
 - Local Government
 - Manufacturing and Engineering
 - Maritime
 - Meat
 - Metalliferous Mining

- Naval Shipbuilding
- Personal Services
- Pharmaceutical Manufacturing
- Printing and Graphic Arts
- Process Manufacturing, Recreational Vehicle and Laboratory
- Property Services
- Public Safety
- Public Sector
- Pulp and Paper Manufacturing
- Racing
- Rail
- Sport and Recreation
- Sustainability
- Technicians Support Services
- Textile Clothing and Footwear
- Timber and Wood Processing
- Timber Building Solutions
- Tourism, Travel and Hospitality
- Transport and Logistics
- Water
- Wholesale & Retail

Training system perspectives

This section seeks your views on the current Australian education and training system and labour market trends.

- 9 Please rank your recruitment priorities for new employees
- a) Academic skills
 - b) Work experience
 - c) Attitude
 - d) Qualifications
- 10 In relation to your industry area, do you think there are... Indicate your view from Strongly Disagree - Strongly Agree
- a) Labour supply issues for your industry? (e.g. not enough trained people)
 - b) Skills supply issues for your industry? (e.g. trained potential staff do not have correct skills)
 - c) Gaps in provision at the post-school level?
 - d) Programs that meet the individual needs of diverse students?
 - e) Qualification types that are a good fit for purpose of industry?
- 11 Do feel the current range of vocational qualifications meets your staffing needs?
- Yes / No / N/A
- 12 Do feel the current range of higher education qualifications meet your staffing needs?
- Yes / No / N/A
- 13 From the perspective of your industry, what is your satisfaction with graduates from the following programmes or courses? Not satisfied - highly satisfied or N/A
- a) Apprenticeships / Traineeships graduates
 - b) Non-apprenticeship entry level VET courses
(Cert I, II, III)

- c) Higher level VET courses
(Cert IV, VET Diplomas and Advanced Diplomas)
- d) Sub-degree higher education sources
(e.g. Undergrad Cert / Higher Ed Diploma / Associate Degree) graduates
- e) Bachelor degrees
- f) Post graduate higher education
- g) Non-Nationally Accredited professional development courses

Integrated VET / higher education qualification perspectives

This section seeks your views on issues around the goal of the Australian Government's 2020 VET Roadmap which is: 'Stronger alignment and integration between VET and higher education'.

14 What do you see as the benefits of stronger alignment between the VET and higher education sectors?

OPEN TEXT

15 What might be the benefits of integrated VET and higher education qualifications for students

OPEN TEXT

16 What might be the benefits of integrated VET and higher education qualifications for industry / employers?

OPEN TEXT

17 What might be the benefits of integrated VET and higher education qualifications be for education and training providers?

OPEN TEXT

18 Do you know any examples of integrated VET / higher education programs?

Yes/no/other

19 If yes, please provide as much detail as possible.

OPEN TEXT

20 Do you have any examples of industry or employment contexts where integrated VET / higher education would be beneficial? If yes, please provide details.

OPEN TEXT

21 How do you see integrated VET / higher education qualifications developing in the future?

OPEN TEXT

Contact details

This section is not mandatory. If you would like to volunteer to be part of the follow up interviews please put in your name and contact details and these details will be detached from the rest of your answers by research team administrators and only used for interview recruitment purposes.

- a) Name
- b) Title
- c) Organisation
- d) Email
- e) Second email / EA/PA email
- f) Phone number

Appendix D: Survey follow-up interview questions

A goal of the 2020 VET Roadmap has as 'Stronger alignment and integration between VET and higher education'

- 22 What do you see as the benefits of stronger alignment between the two sectors VET and higher education?
- 23 What would the role of integrating VET/higher education qualifications be in stronger alignment between the two sectors VET and higher education?
- 24 What could the benefits of integrated VET and higher education qualifications be? (e.g. for students or for industry/employers or providers)
- 25 Do you know of any examples of current practices of integrating VET/higher education?
- 26 Do you have any examples of industry or employment contexts you know of where integrated VET/higher education would be beneficial?
- 27 How do you see integrated VET/higher education qualifications developing in the future?



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