



Secondary School Transitions and Pathways to Vocational Education and Training and Employment Project

Phase 1: Data Enquiry

April 2024





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We thank Food and Fibre CoVE – the authors are genuinely grateful for the opportunity to revisit and reargue issues that we are passionate about and are close to the heart of parents everywhere. Despite, and sometime because of that passion, we have also needed to be kept matter of fact and on task at times, so we especially thank Food and Fibre CoVE's Portfolio Manager Fiona Windle for her perfect pitch of pressure and support.

Last, but definitely not least, we owe an enormous debt of gratitude to Roger Smyth of Spate Consulting. Roger is not just an erstwhile colleague of both authors, but these days also New Zealand's foremost tertiary education thinker and commentator. Thank you, Roger, for your wonderful efforts to shape up our data and sharpen up our analytics – you are second to none. But just to be very clear, all spurious 'reckons' and all errors belong solely to Arthur and Josh.

We dedicate this research effort to all those working in the education sector, getting up every day to help young people find their pathways to success and prosperity, and all too often just plain hope for the future.

Reports like these can never adequately cover the nuances. Our focus for this research is 'the system' and 'strategy' – and that means we must necessarily generalise. So, in what follows, when we make claims about the system and strategy, we equally honour and acknowledge the work that individuals and schools and groups are doing to transform young lives every day. We strongly suspect that a lot of that success is occurring despite the system rather than because of it.

Our goal is that the secondary school system, its settings, policy and implementation environment support all young people to have hope for the future and their aspirations supported.

Purpose

The Secondary School Transitions and Pathways to Vocational Education and Training and Employment Project has been commissioned by Food and Fibre Centre of Vocational Excellence (Food and Fibre CoVE) to understand and seek evidence of the effectiveness of the 'ecosystem' between secondary school and the Food and Fibre Sector.

This evidence gathering is to establish benchmarks on current state effectiveness: what is working; what is not; what has changed in recent years, and the impact of a range of secondary-tertiary-work interface initiatives. Of course, school-to-industry is just one

pathway into the Food and Fibre Sector, and by no means the most well-trodden, compared with tertiary education pathways and career changers.

This is an **interim report**: the evidence and findings from this stage will be used to inform further phases of the research project, particularly to inform stakeholder engagement with industry and education representatives. That means, at this stage, we present findings, but not recommendations.

Evidence gathering continues: An initial round of engagement has been undertaken, particularly at 'system stewardship' level, with responsible and relevant government agencies and system influencers. But the bulk of the 'real oil', we believe, will come from our next stage of engagement: with education sector practitioners and stakeholders, and – critically in any genuine consideration of the interface 'ecosystem' – with the industry and demand-side actors.

The next phase of the project is a **policy and operational strategy review**: this will take together the findings from the data enquiry and examination of the current policy and operating environment that is (or isn't) enabling an effective school, tertiary and industry interface.

Thirdly, **future-focussed research and insights** will bring together quantitative, qualitative, and descriptive research to suggest systemic and/or operational changes that could improve and enhance the school to work interface, particularly with reference to the food and fibre sector.

At the end of the project, information from the data enquiry and subsequent phases will be combined into a final report. We will also use relevant findings to recommend future or further development of Food and Fibre CoVE's **Vocational Excellence Framework**.

Background

Industries are perennially and genuinely interested in the quality and quantity of young people entering their industry.

Young people are the future, school leavers are making a major stage-of-life change, and those who leave school and go directly to work are always by definition, new entrants to industries.

Every industry would also like to see young people choosing employment in that industry. Every industry can also readily articulate the characteristics and attributes of the young people they would like to see coming their way: a good attitude, socioemotional skills as well as cognitive skills, an array of behaviours that add up to employability, and, ideally, a passion for the industry.

As just one part of the 'supply chain' of skills into an industry, school leavers are often over-emphasised given the actual proportion of new entrants to industries who are school leavers, but they will always be a focus: these are our kids after all.

The journey from school to the workforce is one that society hopes every young person makes successfully, albeit via different pathways, stepping stones, and arrival times.

A traditional academic pathway, for example, interposes university between school and work. This is an extremely well known and well signposted pathway, and popular with parents due to its correlation with delivering young people to status and occupations associated with higher incomes and security.

Assuming university as the natural post-school outcome also remains the default and dominant paradigm for secondary school education. All the default structural features of secondary school – timetables, subjects, classrooms, examinations, deans, and departments – are designed as a sound preparation and proving ground for an academic pathway. University Entrance, arguably, is the credential with the most influence over curriculum and resourcing decisions in school, even while, as the Productivity Commission found, it is an 'unhelpful signal' and should be abolished.

"The University Entrance standard is an unhelpful signal. University Entrance does not reliably signify preparedness for higher-level study. It also implies that a young person who achieves University Entrance is best off attending a university, when this may not be the case. Some universities set higher standards, while others would like to enrol students that do not have University Entrance. University Entrance should be abolished." *New Zealand Productivity Commission. (2017). New models of tertiary education: Final Report. (Page 6)*

The inconvenient truth (or inconvenient youth) is that while exceedingly well-lit, the university pathway was walked by just 32 percent of Aotearoa's school leavers in 2022¹, around three in 10. If it were the job of schools to send all young people to university, they would not be doing so well. However, this is just one of their many roles.

Academic pathways are valid and prestigious. But the dominance of University Entrance as a goal and the underlying operating model of the senior phase of schooling, is unjustified on the numbers alone. Furthermore, it is only a partial reflection of the world of work and the broader economy.

Longer term, we have observed this dominance to be destructive to the self-efficacy of so-called "non-academic" learners, and we also suspect it is corrosive to the motivation of thousands of teachers, careers practitioners, and programme designers all doing their darndest to help young people find their path and a learning option that works for them.

The privileging of academic pathways also freaks out many of our kids – with talk of "high stakes" assessments, and "cabbage" subjects. If the prospect of a few more years (or a lifetime) of books does not light their fire of learning, they are subjected to an array of overt and implied signals that are a source of stress or even shame.

Your authors have quite different professional backgrounds, but we have both lost count of the times we have heard from extraordinarily talented and objectively successful people, "I was told I wouldn't amount to anything".

¹ <u>https://www.educationcounts.govt.nz/statistics/school-leavers</u>

More options, and a wider vision, for the final years of schooling are needed. For literally two out of three school leavers, different options are already being pursued. In response, well-meaning governments, and industries, alone and together, have launched a plethora of transition schemes and initiatives over the years. Ministers of all persuasions have come up with new schemes many times, under many different brand names. There have been many innovative and successful schemes, designed to offer new models or options, or provide new pathways into sectors or industries.

Each and every time we reinvent this wheel, passionate and charismatic people show up and transform many young lives. But those people also struggle to make things work because they are truly learner focussed when the system surely isn't. The problem is that interface schemes are just that – schemes – 'bolted on' as alternatives or palliatives, never challenging the core premise of what the last years of school are for, and what it should support young people to do.

The clutter of such schemes is a problem insofar as it fragments resources and attention. But more problematic is the ways all such schemes and models eventually meet the edifice of University Entrance, against which anything else is pejoratively framed as an 'alternative'. Less good, an extra 'cost', more complicated to arrange, or at the very least, a logistical challenge to timetabling and challenging to find teaching expertise – all seen as reasons to not develop and embed these as valuable learning opportunities for many of their students.

The Food and Fibre sector is certainly no exception to this overarching dynamic. When describing itself, food and fibre notably tends to point to additional real and perceived barriers to attracting and retaining young people, relative to other career choices. These include early starts, isolation, travel distances, interesting odours, and lack of proximity to typical sources of young person excitement. A body of research indicates that young people's perceptions about job roles are the predominate factor in their career choices, and that these matter at an earlier age – from around year 6 or 7 of school².

In response, food and fibre industry bodies, collectives, and alliances have launched a series of attraction initiatives, designed to dispel myths, promote the breadth of opportunity and technology in the industry, and promote the industry as an attractive career option. The Food and Fibre CoVE's Attraction and Retention Research Programme confirms alarming high rates of churn and attrition in the industry³, as well as confirming 'disliking aspects of the job' as the most popular reason for departure.

The challenge is therefore in forming and supporting an effective pipeline which matches the needs and requirements of both young learners, employers and communities, including reconciling the perceptions and realities of these roles and career pathways.

² Nicholas H. Foskett & Jane Hemsley-Brown (1999) Invisibility, perceptions and image: mapping the career choice landscape, Research in Post-Compulsory Education.

³ <u>Attraction-and-Retention-Situational-Analysis-Part-B.pdf (foodandfibrecove.nz)</u>

We intend to explore these dynamics in greater detail in further phases of this research, to examine the policy, resourcing, and operating environment that frames or constrains or enables the available options and incentivises some types of delivery over others.

Jumping ahead, we see this as a purpose-based research effort. Our aim is to explore the opportunities to transform the senior phase of schooling into a genuine ecosystem – a place to support young people to make the journey from school to their next step – a journey that should begin at year zero, not year 11 or 12.

At the very – very – core of this work is how a young person develops that passion for an industry – in this case food and fibre – a passion that employers want to see. Our working hypothesis is that people develop a passion for an industry by learning and working in it. It's rarely there on day one and we should never expect it to be so.

Imagine a system where work-integrated learning is a norm, where schools enable young people to taste the industries they are interested in, where educators support employers to ensure that the time on the job is a valuable and satisfying learning experience, where the learner gets to understand the conventions and expectations of work, as well as the demands of the particular industry and occupation.

Imagine a future where the senior secondary school is reframed as supporting progression to a pathway of choice and ensuring that, when a young person is employed in their chosen industry, it isn't day one.

It's a laudable and achievable goal – but schools can never achieve it alone. Such an ecosystem would be defined by, and rely on, effective and productive relationships at the interfaces between schools, post-secondary education and training providers, employers, industries, and government.

Scope of the Data Enquiry

The scope of our data enquiry has included:

- **Effectiveness of Secondary-Tertiary Programmes**: The performance and impact of current transitions and pathways programmes, especially in relation to their effects on the probability or likelihood of students undertaking further tertiary studies related to food and fibre or gain work in the food and fibre sector.
- **Impact of study choices:** Outcomes for secondary school learners studying horticulture and/or agriculture subjects who subsequently enrol in food and fibre related tertiary studies or gain work in the food and fibre sector.
- The effects of starting early: Secondary school learners who earn wages in the food and fibre sector who subsequently enrol in food and fibre related tertiary studies or gain work in the food and fibre sector.
- Further study in Food and Fibre: Year 11, 12 and 13 secondary school learners commencing tertiary studies with a specific focus on food and fibre, including total duration of tertiary learning while still at school.

The core of the data enquiry has been conducted via access to Statistics New Zealand's Integrated Data Infrastructure (IDI), to enable matched data analysis between educational attainment and wider outcomes data, such as future earnings⁴.

⁴ The results in several of the tables that follow in this report have been created for research purposes from the Integrated Data Infrastructure (IDI) managed by Statistics New Zealand.

They do not constitute official statistics. The opinions, findings, recommendations and conclusions expressed are those of the authors not Statistics NZ.

Access to the anonymised data used in this study was provided by Statistics NZ in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business or organisation and the results in this report have been confidentialised to protect these groups from identification.

Careful consideration has been given to the privacy, security and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from <u>www.stats.govt.nz</u>.

The results are based in part on tax data supplied by Inland Revenue to Statistics NZ under the Tax Administration Act 1994. This tax data must be used only for statistical purposes, and no individual information may be published or disclosed in any other form or provided to Inland Revenue for administrative or regulatory purposes.

Any person who has had access to the unit-record data has certified that they have been shown, have read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes and is not related to the data's ability to support Inland Revenue's core operational requirements count of student achievement component-funded learners.

Specific data breakdowns were requested for gender, ethnicity, and for learners enrolled in Kura Kaupapa Māori.

Before we jump into the numbers though, it's important to set out how we got here, in terms of the schemes and initiatives being evaluated.

Secondary-Tertiary Programmes

That need for a broader range of 'vocational' options to be embedded in the curriculum offered by schools has been recognised for many years, and secondary schools have been progressively enabled to outreach to tertiary providers and workplaces to offer education and training options to support this.

The notion of learning beyond the classroom, the need for the system to offer lifelong learning options were underlying principles behind reforms in the late 1980s, which led to the adoption of competency-based assessment and the creation of the National Qualifications Framework (now the New Zealand Credentials and Qualifications Framework) and associated Records of Learning (now Record of Achievement).

Despite pockets of opposition, the secondary school sector leaned in a decade later with the introduction of the standards-based National Certificate of Educational Achievement (NCEA) qualifications in 2002. This was deliberately designed to enable a multiple pathways approach by recognising and rewarding a wider range of achievement, drawn from the Curriculum, Te Marautanga, and other generic or industry competency standards registered by the New Zealand Qualification Authority (NZQA).

Early 'interface' examples included the Secondary Tertiary Alignment Resource (STAR) funding, a largely untagged resource for schools to use to purchase tertiary options: STAR is often used to enable secondary students to take some university study in their final year at school. Another programme was (and is) Gateway – possibly still the best-known and supported workplace experience scheme in some employers' minds. Gateway, administered by the Tertiary Education Commission (TEC), provides funding to schools to enable young people to engage in workplace experience programmes leading to credits they could count both for their NCEA qualification and parts of foundation level industry qualifications.

Youth Guarantee

In 2008, an incoming National government replaced the previous Labour Government's "Schools Plus" policy with a 'flagship' policy programme to support the secondary-tertiary-employment interface – Youth Guarantee (YG).

"Youth Guarantee" – as a phrase – had global resonance at the time: a European Youth Guarantee (that youth would receive the opportunity to achieve a fees-free qualification) had been promulgated by the European Commission in the aftermath of the Global Financial Crisis, which had had a catastrophic impact on youth employment in several European Countries. The Youth Guarantee evolved to become a 'suite' of programmes that included a wide range of programmes designed to address problems at the interface between the education system and the world of employment:

- STAR
- Gateway
- Vocational Pathways
- Trades Academies
- Three plus two
- Service Academies
- Youth Guarantee Fees-Free scheme

Confusingly, "Youth Guarantee" – Capital 'Y', Capital 'G' – had a dual meaning. It was the umbrella term for a group of schemes designed to provide opportunities at the secondary-tertiary-employment interface, and education models designed to retain young people's connection to the education system. The term is also used to refer to the specifically targeted Youth Guarantee 'fees free' scheme developed for the hardest to reach learner cohort – those who had already disengaged from schooling prior to achieving NCEA Level 2. So, the YG fees free scheme was one of the programmes under the YG umbrella.

Similar to the European promise, the YG Fees Free scheme aimed to provide any young person under 25 *without* NCEA Level 2 or equivalent and who was NEET (Not in Employment or Education and Training) with the chance to achieve a foundation level qualification.

The confusion was exacerbated by the existence of yet another distinct programme, Youth Training, which had been spun off from the social welfare agencies' Training Opportunities programme in the late 1990s. Like the YG fees free programme, Youth Training was targeted at those who had left school with low or no qualifications and no prospect of employment. (In this cluttered landscape, Youth Training was eventually folded into the YG fees free programme).

The brand confusion was lamentable to the extent that YG (as a brand) developed an overall association with hard to reach or vulnerable learners, baking in parity of esteem issues that already existed, exacerbated by the limitations on available places in the YG programmes, and limiting the scope of the learners considered for wider YG opportunities, or could benefit from them.

But, the wider Youth Guarantee initiative was used as the umbrella brand for a much wider range of delivery permutations designed for and implemented at the interface of secondary and tertiary education and employment.

For clarity, our research is not considering or evaluating the effectiveness of the feesfree scheme, as this programme is not a secondary school transition programme – the learners involved have already left, and the programmes they undertook were for the most part existing foundation level tertiary programmes.

Trades Academies

Lobbying by longstanding thought leader, Dr Stuart Middleton of Manukau Institute of Technology (MIT) convinced the government of the need for enabling legislation to allow the possibility of 'dual enrolment' – whereby a learner could be enrolled in both secondary school and a tertiary education provider, and engaged in a programme of learning involving both, in some permutation.

The result, achieved via amending the Education Act in 2010, created the concept of a Secondary-Tertiary Programme (STP). This enabled the Secretary for Education to approve a secondary-tertiary programme to be delivered through a partnership of two or more providers, one of which was designated as the lead provider.

The first STP formally recognised was the Tertiary High School, based at the Manakau Institute of Technology (MIT). The young people remained formally enrolled in their local high school but spent all their week in the tertiary education environment.

Trades Academies (TAs) became the centrepiece of the Youth Guarantee Initiative. Trades Academies were designed as partnerships, usually including several schools and a centralising Tertiary Education Organisation (TEO). This enabled flexible models, including school-led and tertiary-led TAs offering programmes through a range of delivery approaches – all in-school, block course, all tertiary, and one/two day a week models. Notably for the Food and Fibre sector, the only Industry Training Organisation (ITO)-led Academy was established by the Primary ITO.

TA programmes, per the name, tend to practical and vocational options oriented towards skilled trades and professions, but there is nothing intrinsic that confines Trades Academies to the "trades".

The term "Trades Academy" is not trademarked – we have been positively surprised to learn of the emergence of several 'off-grid' TAs – though fewer examples for food and fibre. These "Trades Academies" are not among the current 14 officially approved Trades Academies enabled and funded though the STP policy, but homegrown models or 'hybrids' where schools have formed partnerships and 'found a way' through the funding settings to offer a programme that meets the definition of a STP but is not itself a formally recognised STP.

In our future-focussed research phase, we intend to explore the operational strategies developed in more depth – what examples of these innovative and hybrid models are occurring in the food and fibre sector, how they are making the resourcing work, and what opportunities they offer.

The Trades Academy brand has now gained significant traction. Our stakeholder engagement to date suggests there is now sector-wide education and industry understanding of what trades academies are, their value proposition, and how they work. Parents, too, are aware of the concept and understand they can be a very good option for their child, and certainly for other people's children. We hope the findings from this research add some evidence in support of that understanding.

Vocational Pathways

If Trades Academies were the centrepiece of Youth Guarantee, then Vocational Pathways (VPs) were intended to be the glue. This concept – initially called 'Sector Pathways' [Figure 1] – was introduced by the Industry Training Federation (ITF), the membership body for ITOs of the time.





A number of ITOs (including the Primary Industries ITO) had identified the way secondary schools were using ITO unit standards as a concern. These showed that these unit standards were being used extensively, but as "easy credits" or "a dumping ground for dummies". Use of these standards in this way – out of the context of the qualifications they were part of, was quite unfair to industry training.

Furthermore, "Level 2" NCEA and "Level 2" Industry Training had evolved with quite separate histories and purposes, but now can be found on the same level of the New Zealand Credentials and Qualifications Framework, adhering, in theory, to the same level descriptors, in terms of knowledge, skills, and attributes. The way that these standards were being used reinforced parity of esteem problems and reinforced an artificial binary split between classroom-based learning and vocational education.

As part of Cabinet decisions in December 2011 on the scope of the Youth Guarantee programme, Ministers agreed to include the pathways concept, noting that "five initial vocational pathways will be defined", referring to the five proposed sectors. This decision implicitly acknowledged that other pathways could be developed in future, finally putting to use the latent 'multiple pathways' design feature of NCEA.

The 'vocational' word, in retrospect, was more trouble than it was worth, by running up against a mindset that defined 'vocational' as 'non-academic' and 'non-white collar' rather than what was meant: 'vocational' as simply 'relating to the world of work' or 'work integrated learning', or even a 'life calling'. Up against that well-ingrained mindset, the use of the term 'vocational' served to side-line the pathways primarily as a careers

advice tool, rather than as a underpinning organising framework for NCEA and the senior school curriculum, as well as a careers tool to inform and guide young learners and their study decisions.

Although, the VPs did not meet their full potential straight away, the scepticism and uncertainty did not undermine them altogether. The VP's design idea was deceptively simple: the colour coded credits were recommended for and related to the industry sectors with colour coding of the occupations and study options within those sectors.

The VP "colour wheel" helps young people and their parents understand how their educational achievement relates to post-school possibilities – which is one key to their appreciation of the relevance of their learning. It was also designed to make use of the multiple pathways promise of NCEA, and as a whole-of-curriculum design tool by showing alternatives to the dominant University Entrance-oriented curriculum.

The vision was to enable the curriculum and programme to be designed in a way that took account of the pathways and for employers to be informed in a simplified way, thanks to the colour coding of credits, about young people's strengths and achievements and their relevance to their industries and workplaces.

The five initial VPs were launched in mid-2013. Following the definition work on the first five VPs, it was clear the remaining credits and jobs strongly tended to the Creative Sector. So, a sixth VP – for creative industries – was launched one year later and completed the set.

Sector working groups who brought together to define the recommendations for each of the pathways, noted that all 400 plus occupations profiled on the Careers New Zealand website mapped to one or more of the VPs – a powerful proof of the VP concept. This also suggested that, as a classification system, it was reasonably comprehensive in aligning to the workforce as a whole.

A further endorsement of the VPs came in 2019, when the Reform of Vocational Education (RoVE) proposed the six new Workforce Development Councils (WDCs), established to set standards and develop qualifications across the vocational education sector, would be classified based on the Vocational Pathways.



Figure 2 – the Vocational Pathways logo at official launch, 2013

Initial stakeholder engagement suggests the VPs have gained traction as a useful tool, with strong understanding in the education sector. The fact that a student's NCEA can be endorsed with a VP award adds to the value and acceptance of the VPs by the public. Our desk-based search of secondary school websites as well as our interviews, suggests this particularly applies to the careers space, or where Trades Academy or Gateway options are being discussed. The VPs, however, have been far less effective in influencing core curriculum design, timetables, or delivery.

In general, we heard that over the last 10 years there has been a growing mindset shift with respect to vocational education and the need to offer more vocational options in the senior phase of secondary school. We were also assured that some schools have fully embraced the concept.

As evidence of this, we note wide variation in the percentages of students achieving VP Awards (Figure 3) across school deciles, suggesting that schools with students from different socio-economic backgrounds are using the VP framework to design (or align) their assessment offering. Again, this will be further tested with practitioners as will the extent to which this also reflects curriculum strategy shifts.

Figure 3 – Large variation in the percentage of 2022 school leavers with one or more Vocational Pathways Awards amongst schools within each decile.



Source: Ministry of Education (2022) School leaver's attainment, Vocational Pathways Awards

Based on engagement to date with system influencers, it would appear that VPs have been caught up in the wash of wider curriculum and NCEA changes and reforms and refreshes. As such, their prominence and visibility has been muted. There is certainly an argument for eventually embedding such specific developments into 'business as usual', however we believe the Ministry of Education and the Tertiary Education Commission could have done more to communicate and support VP implementation. Diminishing the visibility of VPs – and especially their conceptual framing as a careers-oriented framework inclusive of *all* post-school destinations, risks reverting to the default emphasis on University Entrance as the ultimate outcome of secondary school.

Finally, and most recently, a proposal to develop a vocational entrance award was paused by the former Minister of Education following consternation from Workforce Development Councils among others, and following advice from Ministry officials. That was sound advice in our view. As it stands, we have a strong sense that secondary schools – and possibly all schools - have been quite overwhelmed with the sheer amount and pace of change visited on them through an enormous and 'generational' programme of education reform. Again, we will have more to say on these matters as part of the policy review phase of this project.

Key Findings

Participation in Trades Academies (Secondary-Tertiary Programmes)

In 2022, the Ministry of Education funded 10,500 Trades Academy (TA) places, of which 1,942 (19%) were in Primary Industries. Of those Primary Industry TA places, 60% are offered through the New Zealand Trades Academy managed by the Primary ITO – more than the rest of the Trades Academies combined. [Table 1]

Most of the progressive increases to TA places have been funded through fiscally neutral transfers within the YG appropriation. In particular, YG fees free has often been undersubscribed, while unemployment has been low. Adding to this, later Ministerial decisions made all Level 1 and 2 tertiary provision fees free, meaning that YG fees free lost much of its distinctiveness as a delivery model – albeit still providing higher subsidisation for pastoral care and transport assistance than general tertiary provision.

	Total places in Food & Fibre	Primary Industries - General	Agriculture	Horticulture / Viticulture (Cellar Operations)	Apiculture	Forestry / Wood Manufacturing & Processing	Environmental Science / Conservation / Pest/Predator Control	Aquacutture / Maritime / Fishing	Equine / Animal Care (VET Nursing)
NATIONWIDE	1,240	L2/L3	L2/L3	L2/L3			L2		L2/L3
AUCKLAND	15						L3		L3
BAY OF PLENTY	75		L2/L3			L1/L2/L3	L3	L2	
CANTERBURY	172	L2/L3		L2/L3			L2/L3	L2/L3	L2/L3
HAWKE'S BAY/TAIRAWHITI	66	L3	L2			L3			L2
LOWER NORTH ISLAND	50					L2	L3		L3
NORTHLAND	139	L1/L2/L3		L2			L2/L3	L2/L3	
OTAGO	11			L2/L3					
SOUTHLAND	28		L2						L2
TARANAKI	35		L2/L3			L2			L2/L3
TAUMARUNUI	20	L2							
TOP OF THE SOUTH ISLAND	42			L2/L3			L3		
WAIKATO	16	L2				L2			
WELLINGTON	18								L3
WEST COAST	26						L2/L3	L2/L3	
NUMBER OF FUNDED PLACES	1,953								
NUMBER OF PROGRAMMES		7	6	5	0	5	8	4	9

Table 1: Secondary-Tertiary Programmes (STP) 2022 - Funded Places for Primary Industries

Source: Ministry of Education, Response to Official Information Act request, 2022.



Source: Ministry of Education, Response to Official Information Act request, 2022

Outcomes from completing Trades Academy Programmes

All sources in this section are from Statistics New Zealand's Integrated Data Infrastructure (IDI) unless otherwise stated.

Between 2015 and 2021, 426,948 young people left school, according to Statistics New Zealand (IDI). Just a small proportion of these have completed Trades Academy programmes as part of their senior secondary experience, and only a fraction of these have undertaken Trades Academy programmes in food and fibre industries: 8,913 learners – just 2% of all school leavers over that period.

Therefore, even now, with 10,500 funded places for Trades Academies, this programme is being offered to a significant minority of students – there were 168,810 learners enrolled at Years 11-13 in 2023. This is clearly still only scratching the surface. If one believes that most or all students ought to have the opportunity to *experience* their next step before *choosing* their next step, there is clearly a significant number of students not getting that opportunity.

In much of what follows, unless stated otherwise, we have focussed on school leavers between 2015 and 2019. That is, a full five years of high school – equivalent to one throughput of a typical high school generation if you like, and enough time since to make some useful judgements about where they are now. It also quite neatly avoids a significant confounding variable - COVID-19.

Entering Employment

Completing Trades Academy programmes has a profoundly positive effect on the subsequent probability of entering the food and fibre industry in subsequent years.

The graph below [Figure 4] represents the proportion of school leavers entering the food and fibre industry, one year, two years, or three or more years following school, broken down by gender.



Figure 4 -Percentage of school leavers in years 2015 to 2018 entering the food and fibre industry 1, 2, and 3+ years after leaving school, by gender - no Trades Academy programme

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

Below is the comparison population [Figure 5], but these young people have completed a food and fibre Trades Academy programme.



Figure 5 -Percentage of school leavers in years 2015 to 2018 entering the food and fibre industry 1, 2, and 3+ years after leaving school, by gender - having completed a Trades Academy programme

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

The comparison is stark. For example, a young male's probability of entering the food and fibre sector any number of years after leaving school is 18%. The equivalent probability for females is 14%. But add Trades Academy – now we see 60% probability for males and 56% for females.

It is certainly the case that young men and women with aptitude or interest in the food and fibre sector are more likely to opt in (or be sent) to Trades Academy programmes. Equally clearly though, these programmes provide a vastly more efficient pipeline of young talent into the industry – and as you are about to read, a higher quality recruit who has a significantly higher chance of being retained in the industry for longer.

Industry Retention

Nearly 5,000 (4,865) school leavers completed food and fibre STP programmes between 2015 and 2019 and entered the Food and Fibre industry in their first year post-school. 26% of them were in the industry for less than one year, while 46% had stayed in the industry three years or more.



Figure 6 – Retention in Food and Fibre employment after completing a food and fibre STP programme

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

55,400 school leavers between 2015 and 2019 subsequently joined the Food and Fibre industry, having not completed STPs in related vocational fields. Of those learners, 42% stayed in the industry for less than a year, while just 21% stayed in the industry three years or more.



Figure 7 - Retention in Food and Fibre employment without completing a food and fibre STP programme

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

These data show a significant positive association between completing STP programmes and industry retention. Therefore STP participation is a predictor of longer retention in the industry; it likely has the effect of confirming participants' nascent interest in food and fibre as a future industry of employment. Further, IDI workforce data is showing the overall proportion of people in the industry who completed STP programmes is also growing. This is partly a function of the longevity of the Trades Academy programmes delivering more young workers into the industry, but the superior retention of those learners is having a discernible amplifying effect.

This result indicates a positive impact through actively offering 'try before you buy' options to young people before they leave school. Added to this is the likelihood the graduates were more 'work ready'.

Graduates of food and fibre programmes through Trades Academies have had a chance to experience the industry, while still engaged in school, and by completing their programmes have proven they have strengths, or at least an affinity with the sector through practical experience of it.

The positive retention effect of completing STPs is seen across all ethnic groups. For example, for 1,735 Māori STP completers between 2015 and 2019, 225 (13%) were in the industry between 2 and 3 years, while 680 (39%) remained for three or more years. This suggests just over half of Māori STP completers who enter the industry will be there for at least two years.

Compare this with Māori ākonga who entered industry without completing an STP programme. Of a total of 16,980 Māori school leavers who entered food and fibre, 2060 (12%) were there between 2 and 3 years, and 3,310 (19%) remained three years or more.

Just as relevant to employers however are those who don't stay. Again, for Māori ākonga, completing a STP meant there was a 30% chance of leaving within a year. For those without completing STPs, the chance of attrition of a Māori school leaver within a year rise to 44% [Figure 8].



Figure 8 – Retention in the Food and Fibre Industry: 2015-2019 Māori school leavers with and without having completed a STP programme

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

The same trend is seen in each of the major ethnic groups – those who have done a STP before taking up employment in the food and fibre sector are more likely to stay longer. Figure 9 shows the data for the European ethnic group – which accounts for nearly 60% of the school leavers entering the industry.



Figure 9 – Retention in the Food and Fibre Industry: 2015-2019 European-ethnic school leavers with and without having completed a STP programme

Enrolment in Tertiary Education

Completion of a STP programme also significantly increases the probability of pursuing food and fibre options at tertiary level, including work-based traineeships and apprenticeships. Note that in the graph below [Figure 10], 'none' includes school leavers who pursued tertiary education in other sectors.

This data suggests that overall, 4% of school leavers between 2015 and 2019 subsequently enrolled in food and fibre-related tertiary study. This is low, proportionate to the total size of the workforce, and suggests further work on effective attraction initiatives is warranted.⁵

It should be recalled though that the industry includes low and semi-skilled roles that are filled by people with no further post-school qualifications, and many roles are also filled by people who did not undertake their study in New Zealand (meaning their educational qualifications are not visible in the IDI).

However, if we now add completion of a STP programme to that same five-year cohort of school leavers, 22% enrolled in food and fibre related tertiary study – this is a very large difference; it reinforces the observation that the ability for learners to test and learn in the industry while still at school, intuitively and evidentially, drives a more efficient and effective pipeline to the industry.

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

⁵ Please see the research programme on <u>Attraction and Retention</u> led by Scarlatti Limited for Food and Fibre CoVE



Figure 10 - 2015-2019 school leavers enrolling in food and fibre tertiary education options

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

Earnings

It is one thing to show that Trades Academies clearly increases the chances of young people entering and remaining in the food and fibre sector – but what about the success they might experience as a result? One proxy for this is earnings. Earnings is both a measure of the benefit to the individual and a proxy for the value they produce for their employer and hence for the skill-level of their jobs. The data shows that completing Food and Fibre Trades Academy programmes delivers direct benefits to individuals. It can be inferred from higher incomes that these graduates experience longer term benefits through retention and progression in the industry. It can also be inferred that those who have gone through these STPs are among the more skilled workers in the industry. That, and the greater retention, suggests the STPs are contributing to a more skilled workforce.



Figure 11 - 2015-2017 School leavers in Food and Fibre sector – earnings three-years after leaving school – not having completed a food and fibre STP programme

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

If, for the sake of argument, we assume the \$60,000 plus earners here are earning exactly \$60,000 (a 'worst case' average), the average earnings of this group is \$23,670.

Now let's look at learners who completed a secondary-tertiary programme.

Figure 12 - 2015-2017 School leavers in the Food and Fibre Sector – earnings three-years_after leaving school – having completed a food and fibre STP programme.



Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

Again, assuming the worst case that \$60,000 plus learners are earning \$60,000 only, the average income of this group is \$33,249 – strongly suggesting a significant premium over three years relative to students who did not undertake STP programmes.

Strikingly also, the positive earnings effect of completing STP programmes is visible just one year after leaving school. This suggests Trades Academy graduates are entering the industry at a higher wage level or into higher-level roles due to superior skill levels, and/or their Trades Academy experience is enabling them to progress more quickly in the industry from an earnings perspective showing that their perceived value to employers is higher.

Figure 13 - 2015-2017 School leavers working in the Food and Fibre Sector – earnings one-year after leaving school – not having completed a STP programme.



(The average earnings for these learners is \$17,024.)

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

Figure 14 - 2015-2017 School leavers working in the Food and Fibre Sector – earnings one-year after leaving school – having completed a STP programme.



Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

(The 'worst case' average income for this group is \$22,663 – here again, this suggests a significant earnings premium compared with those who have not completed STP programmes.)

Conclusion

In summary, Trades Academies provide a deliberate and practical introduction to the sector ahead of entering it. As a result, learners are more likely to choose further study options relating to the sector, more likely to enter the industry, more likely to stay in the industry longer, and have significantly higher and faster growing incomes.

Given these findings, the fact that the Ministry-led <u>programme of evaluations</u> of the YG programme and of TAs in particular ceased in 2018 is a total head-shaker, as Ministers have been deprived the opportunity to divert more resource to a programme that clearly works, and from which a far higher proportion of senior secondary students could and should benefit.

The generalised opportunity for senior secondary students to spend part or a lot of their time exploring their potential next steps beyond school will be a core part of the next two phases of this research programme.

It's worth remembering that under our current law, 16-year-olds are allowed to leave school. Given that, presuming society sees benefit in people staying engaged in learning lifelong, we think it's time for the system to reframe the premise of the final years of schooling – post-compulsory – as a process of exploration of potential beyond-school pathways in tertiary education and the workforce.

This will take significant effort, from sheer logistics of timetabling to establishing multifaceted relationships and arrangements between schools and other local education and employment stakeholders. But it is a necessary effort, to ensure young people are shown a range of post-school possibilities, and not just for those lucky enough to take up scarce Trades Academy places.

Achievement of Vocational Pathways Awards

Along with identifying credits recommended for sectors across a record of achievement, NZQA issues Vocational Pathways Awards as an endorsement to NCEA Level 2 when students achieve:

- At least 60 credits from standards recommended for the sector
- At least 20 credits from standards identified as relating to the sector
- The literacy and numeracy requirement for NCEA Level 2.

Vocational Pathways Awards are recorded on a Learner's Record of Achievement and are a formal NZQA Award in the same category as University Entrance which also works by indicating when a NCEA qualification has been compiled in a way that meets a set of minimum defined requirements.

In 2022, 7,472 (12%) of all NCEA learners achieved one or more VP Award. 0.8% of all students achieved a primary industries VP award.

Within the group who achieve the awards, Primary Industries bucked the overall trend with an increase in the number of VP awards between 2020 and 2021. It is also the third most frequently awarded VP – slightly ahead of Construction and Infrastructure.

Figure 15 – School Leavers with one or more Vocational Pathway Awards (%) 2021-22



Source: Ministry of Education (2022) School leaver's attainment, Vocational Pathways Awards

While the Ministry of Education captures achievement of VP Awards and these are available broken down by district, the IDI does not currently capture if a learner has completed their NCEA qualification with a VP award.

As such, our best proxy has been to sample students who undertook the relevant subjects in NCEA, such as Agriculture and Horticulture – which shows a positive effect, and these results are reported in the next section. However, this has been a frustrating limitation and an area where there would be value in further work. We also note that the scope of our study has not included the use of ITO unit standards in schools – which is widespread. While not necessarily used as part of 'interface' programmes, the nature of these standards tends to assess practical skills for the industry, as was the intention in developing them. As above, it was the significant use (and sometimes misuse) of ITO standards which substantially led to the Vocational Pathways developments in the first place.

It is the case however, that a significant number of Primary ITO unit standards are identified either as 'recommended' or 'sector related' for the Primary Industries Vocational Pathway and the associated NCEA-linked Vocational Pathways Awards. That being the case, it is concerning at a general level though see Vocational Pathways Award numbers are clearly declining [Figure 16].

Figure 16 – Fewer school leavers with Vocational Pathways Awards in 2022



Source – Ministry of Education – Education Counts. Decisions made with industry in 2018 to refine the Award criteria from 2019 caused a significant drop in the number of senior students attaining a Vocational Pathway (VP) Award, particularly the Creative Industries award.

This is partly explained through some sectors reducing the number of recommended standards to define the pathway's recommendations more tightly – the key occasion for this occurred in 2019 following a full review of the pathway recommendations, rather than an annual maintenance process.

The decline is further explained by COVID 19 – when students were less able to achieve practically-based and sector-related credits outside the classroom, as well as the use of learning recognition credits to top up NCEA achievement for students whose learning had been disrupted through lockdowns. Such credits were not linked to VPs.

It remains the case that Trades Academy and Gateway programmes are required to align with vocational pathways. However, the effectiveness (or existence) of any monitoring and quality assurance of this alignment is far less clear and uncertain.

Forthcoming changes may further cloud the picture: primarily the NCEA standards review, with its full re-development of curriculum-based standards into fewer and larger assessment standards, and over several years, the anticipated replacement of the former ITOs unit standards with new skill standards developed by Workforce Development Councils for tertiary learners in the vocational education and training sector.

Further Education Outcomes from undertaking Agriculture/Horticulture subjects at school

Between 2015 and 2021, a little under 5,000 school leavers per year had undertaken Agriculture or Horticulture as a subject for NCEA while at school. This represents 8% of all school leavers over the period. However, numbers have been relatively stable over the period. By gender, the ratio is roughly 2:1 male to female. Notably, between 35% and 38% of these learners were Māori, suggesting Māori are overrepresented among Agriculture and Horticulture learners, relative to the general population.



Figure 17 - School leavers who have achieved Agriculture/Horticulture credits, by ethnicity

Figure 18 - School leavers who have achieved Agriculture/Horticulture credits, by gender



Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

As noted in the previous section on VPs, the use of ITO standards by schools has not been explicitly captured in our data enquiry. Our suspicion is that the well-considered use of industry standards as part of intentionally designed school-based programmes (e.g., alongside or augmenting Agriculture, Horticulture achievement standards) may well be delivering positive results in terms of industry entrance, retention, and progression, such as we have found for Trades Academies.

As such, we believe there is strong merit in a further data enquiry into the use of industry standards by schools, because while these may not be being delivered through the mechanism of recognised secondary-tertiary interface schemes, their use may well imply collaboration between industry and secondary school of the very sort we are encouraging. We expect to explore this further in the next stages of this research.

Source: Statistics NZ, Integrated Data Infrastructure. Analysis by Scarlatti Ltd, to specifications determined by the authors

Data Limitations

The course of this data enquiry has illuminated some surprising limitations. Firstly, in the IDI, while it is possible to ascertain if someone has undertaken a Gateway programme, there is no visibility over which of their credits were achieved through Gateway.

As the best possible proxy, we have identified only those students who did Gateway who had also received wages via a food and fibre employer. Unfortunately, this is two-fold problematic. Firstly, most Gateway students are unpaid, suggesting that those wages may have come instead from a part-time or after school job, not necessarily their Gateway programme. For this reason, we have not focussed on Gateway data except at a high level.

The popularity of the Gateway programme and perceived effectiveness would suggest it is worth a comprehensive evaluation and the establishment of a monitoring capacity. A full evaluation of Gateway was completed over 15 years ago, and an internal review of STAR and Gateway was completed as part of bringing those programmes into Youth Guarantee.

More widely, we were equally surprised to find that Ministry of Education evaluations of both Fees Free and Trades Academies ceased beyond 2018. While those evaluations were less than glowing about YG fees free making a difference to employment outcomes, there was certainly strong incipient evidence that Trades Academies were having a positive impact on both education and employment outcomes.

It is certainly a major lost opportunity and a stewardship failure by not continuing to evaluate Trades Academies. The consequence: officials have not had the benefit of this evidence to advise Ministers to invest significantly more in a programme that is clearly creating more effective and efficient pathways into industries and is sustaining positive achievement and engagement results.

More critically though, the need in such cases is to continue to monitor trends, particularly given the 2018 evaluation will have largely covered cohorts that undertook the early years of the programme, and as such will not have captured several policy refinements, such as the requirement for programme to align with Vocational Pathways.

On the basis of our findings, we strongly encourage the Ministry of Education to resume and update its evaluation of the performance of STPs, especially Trades Academies. We'd also suggest that the YG fees free scheme is not "bundled" with this evaluation as previously, since it does not meet the definition of a secondary school transition pathway and has, by definition, a different market segment.

As discussed above, it also proved not possible within our enquiry to link VP Awards with wider outcomes through matched data, since the IDI does not currently include VP Awards data. Given that the Ministry of Education holds this information and reports it through interactive tools to a district granularity, it would be helpful to see VP awards data included as part of the IDI matched datasets relating to individual learner achievement – analysing this could tell important stories about the *actual* pathways and educational choices being more effective at delivering vocational outcomes.

Linked to the above, the scope of our data enquiry did not include, in and of itself, the inschool use of ITO unit standards by secondary enrolled students, not necessarily through a funded scheme such as Trades Academy or Gateway, and we believe there is merit in this piece of data work on its own, including to guide future thinking by standard setting bodies on the most effective learning and assessment options it can develop to support and augment Curriculum-based delivery.

In closing this section, it is worth saying again: researching the school-to-industry interface inherently means we could miss the proverbial "wood from the trees", given that far greater numbers of 'arrivals' to Food and Fibre occupations come via the tertiary education sector, from other industries, and from our international airports.

The talented school leaver is at once a scarce resource that industries seek, and simultaneously a young adult on the cusp of the rest of their life, worried about the future, and if they're lucky, equally worried parents alongside them. But they are just one small part of the pipeline to the workforce, and it's important to keep that in perspective, especially as we turn to what the employers are (or are not) doing in this ecosystem, as opposed to the schools.

Stakeholder Engagement

Our stakeholder engagement to date in this multi-stage research has been about establishing the lay of the land. We have focussed on governmental, systemic, and strategic layers. In part this was necessitated by the authors' need to update on the 'state of play', but also to capture the current stewardship of secondary-tertiary interface, careers and transition issues, government priorities, and direction of travel.

Key governmental developments in recent times include the establishment of six Ohu Mahi Workforce Development Councils as part of the former government's Reform of Vocational Education, which initially proposed and ultimately delivered a sector-based classification, largely modelled on the vocational pathways sector-based classification.

In the secondary education sector, a huge amount of 'generational' NZ Curriculum and NCEA review processes have been launched, which if they haven't entirely overwhelmed the sector, have come frighteningly close.

However, in this context, the review process, following national priorities, is explicitly highlighting the need for real world and community-connected contextualisation of learning and assessment. The Vocational Pathways themselves are under review as part of the NCEA refresh.

The previous government amalgamated the statement of National Education and Learning Priorities (NELP) and the Tertiary Education Strategy (TES) into a common format, aiding concepts of connection and progression between the two sectors. The NELP is statutory and schools "must have regard" to its priorities and objectives. NELP/TES Objective 4 – Future of Learning and Work, includes several straightforward actions to ensure schools are helping ākonga see the connection between their learning and the world of work; break down stereotypes (such as gender) relating to occupations and collaborate with employers and tertiary education providers to provide successful transitions and pathways beyond secondary school.

In our initial engagement, stakeholders suggested that while there is high awareness of the NELP and its actions, responses and practices to these encouragements will vary. It was pointed out to us that in the last three years in particular, schools have faced an extraordinary period of challenge (e.g., Covid-19), but on top of this, an unprecedented rate and amount of government-led change and reform. As one stakeholder said, "A lot of schools will have read it out in the staffroom and gone 'we're already doing that' and moved on".

Another key development during this project has been the release of a new National Careers System Strategy, followed by a high-level action plan. We heard a range of feedback that the National Careers Strategy seemed disappointingly light, which accords with our own assessment.

Expectations were high, given the amount of time it has been promised, several years under development, and the amount of stakeholder engagement that has gone into producing it. Some of the associated actions – for example developing a gap analysis against existing careers information or identifying critical success factors of community-led careers programmes are the sorts of things we would have expected to underpin the development of the long-awaited strategy, as opposed to being the actions resulting from it.

More is anticipated in early 2024⁶ with the launch of Tahatū – a new and upgraded careers website, which we understand to involve AI elements to support personal careers exploration, underpinned by the O*NET interests' profiler, using its skills and occupational classifications. We understand that work has occurred to localise the US-developed O*NET lists for the Aotearoa context and Te Ao Māori cultural context.

Using the results of this data enquiry, in the first half of 2024 we will engage further with system influencers and practitioners to validate and understand further the dynamics and on-the-ground realities in the education sector. Equally, our attention will turn to the demand-side – employers and industry representatives, who are equally critical stakeholders and participants in the school-to-work ecosystem.

Stakeholder engagement to date has largely been carried out through one-hour semistructured interviews, with the understanding that comments would not be attributed to individuals. These conversations have offered rich insights which will also inform future stages of the research programme. We have conducted such conversations with:

⁶ As of April 2024, we understand that Tahatū is being piloted with a small number of schools.

- Ministry of Education: Representatives from Tertiary Education and Schooling Policy, Regional Transitions Advisers, NCEA and Curriculum Change, Employer and Community.
- New Zealand Qualifications Authority: school relationship managers, staff from NCEA and qualifications divisions.
- Tertiary Education Commission: Representatives of the Careers Directorate.
- Muka Tangata and Hanga-Ara-Rau Workforce Development Councils: Industry engagement and qualifications development personnel.
- Te Pūkenga: Representatives from former ITP and ITO business units, Trades Academy and transitions leads, and Ako directorates.
- Careers and Transitions Educators (CATE) leadership.
- Industry training and vocational pathways researchers.