



Australian Government

Jobs and Skills Australia

Understanding the training landscape

Using data from Jobs and Skills Australia

November 2022



Today's presentation

AIM:

Show you how data products from Jobs and Skills Australia can help you to identify:

- which jobs are most in demand
- the skills most in demand
- which qualifications map to those job & develop those skills
- the biggest skills gaps between training and demand

CASE STUDY:

Contract, Program and Project Administrators

Jobs in demand

Skills in demand

Mapping quals

Identifying gaps



Update on Jobs and Skills Australia

Jobs and Skills Australia commenced operations on Wednesday 16 November 2022.

The government is conducting further consultations on the functions and governance of Jobs and Skills Australia and will introduce a second tranche of legislation early in 2023.

Jobs and Skills Australia has the following initial functions:

- provide advice on:
 - **Australia's current and emerging labour market**
 - **Australia's current, emerging and future skills and training needs and priorities**
 - **the adequacy of the Australian system for providing VET, including training outcomes;**
 - **issues relating to skills and training, and workforce needs, in regional Australia**
 - **pathways into VET and pathways between VET and higher education**
 - **opportunities to improve employment, VET and higher education outcomes for disadvantaged cohorts**
 - **opportunities to remove gender barriers in training and in the labour market and improve gender outcomes;**
- prepare capacity studies, including for emerging and growing industries and occupations;
- undertake workforce forecasting and undertake cross industry workforce analysis;
- undertake research and analysis on the resourcing and funding requirements for RTOs to deliver accessible quality VET courses;
- inform the public about all of these matters

Jobs in demand

Skills in demand

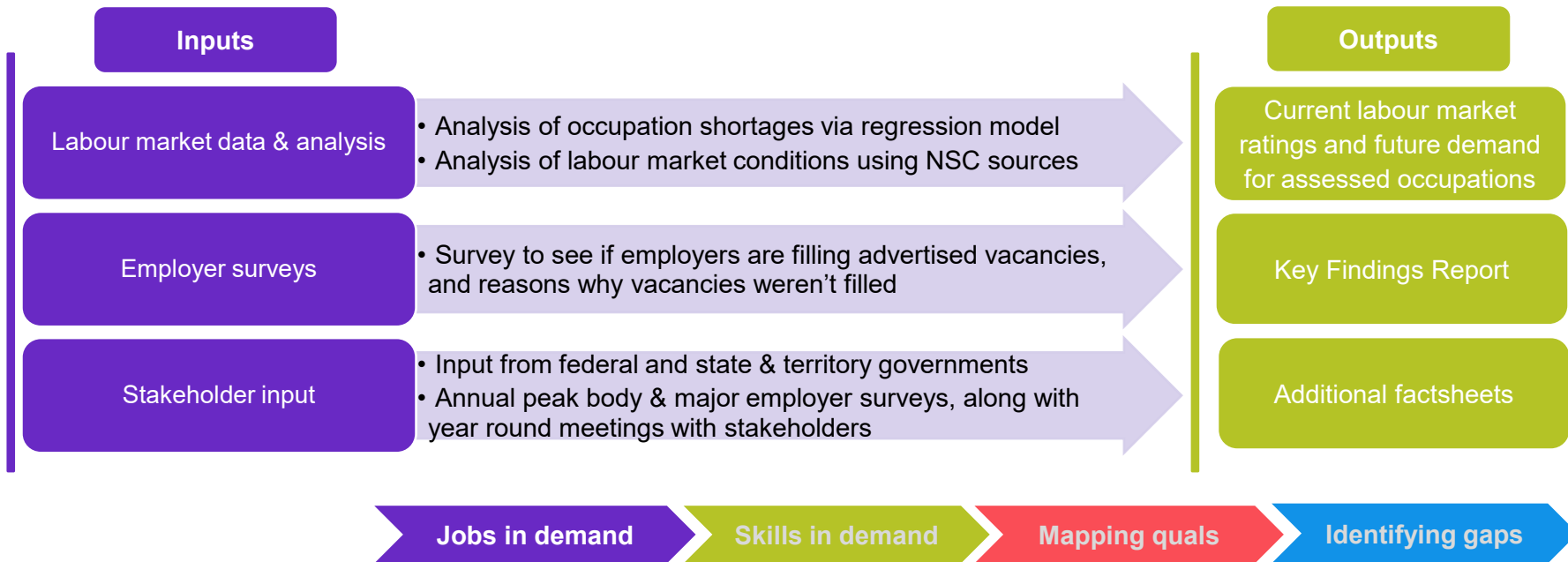
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Skills Priority List (SPL)

- The SPL provides a current labour market rating and a future demand rating for occupations.
- The SPL helps inform advice on targeting of policy initiatives (such as skilled migration and targeting training funding incentives) - but it is not the sole input to such policies.





Skills Priority List – 2022 key findings

Professionals

- About two-fifths (39%) of occupations in the Professionals group were in shortage in 2022, compared to 19% in 2021.
- This was driven by Health Professional occupations, with suitable applicants per vacancy almost halving between 2021 and 2022.
- Most employers recruiting for Professionals required applicants to hold a bachelors degree, including having a high level of experience.

Technician and Trades Workers

- Almost half (47%) of all Technician and Trades Worker occupations were in shortage in 2022.
- Many shortages are persistent over time, especially for the Skill Level 3 cohort of this major occupation group.
- Employers typically receive a small pool of applicants, with many lacking experience requirements and found to be unsuitable.

Occupations in shortage by skill level

- The proportion of occupations in shortage rose across every skill level between 2021 and 2022.
- Skill Level 3 occupations, those generally needing a Certificate III or IV, recorded the highest share of occupations in shortage (46% in 2022, up from 38% in 2021).
- The largest increase in the share of occupations in shortage was for skill level 1 occupations (35% in 2022, up from 19% in 2021), which are those generally needing a bachelor degree or higher.

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Occupation in focus – Contract, project and program administrators

Contract, project and program administrators plan and undertake administration of contracts, organisational programs, special projects and support services.

5111 X Occupation		SHORTAGE RATING										Sort By ANZSCO
ANZSCO Code	Occupation	National	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	National	
<input type="checkbox"/> 511111	Contract Administrator	S	S	S	S	S	NS	S	S	S	<input type="checkbox"/> STRONG	
<input type="checkbox"/> 511112	Program or Project Administrator	S	S	S	S	S	NS	S	S	S	<input type="checkbox"/> STRONG	

The 2022 SPL showed both Contract Administrators and Program/Project Administrators in shortage nationally, with strong future demand.

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Jobs and Education Data Infrastructure

JEDI creates the Infrastructure to enable data to be combined together using advanced analytics.

Insights are produced using unstructured big data sources and machine learning techniques.

Skills as the common language to:

- ❑ match labour demand (jobs advertised) to labour supply (VET and HE)
- ❑ Show how skills are changing jobs and creating new ones.



Skills: a common language

Skills underpin the data and enable us to speak in a common language.



Linking jobs to training

Skills data enables us to find opportunities and link jobs to training and education.



Forecasting future needs

JEDI enables us to anticipate future needs and adapt to changes in our economy.

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Australian Skills Classification

The ASC is the common language of skills in Australia.

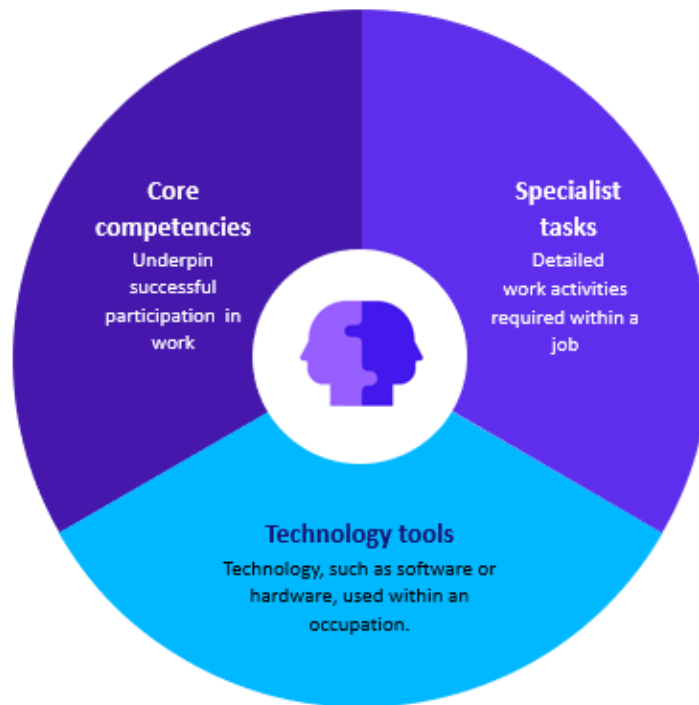
Changes how Australia defines jobs by looking at skills rather than occupations, job titles or qualifications.

Is relevant to the Australian Labour Market, is comprehensive and comparable across occupations.

Framework initially built from bottom up using data but has been expanded using stakeholder feedback and qualitative methods.

Features 1,275 skill profiles:

- ❑ 10 core competencies for every occupation
- ❑ 70 technology tools
- ❑ 2,126 specialist tasks, these are grouped together into skills clusters and skill cluster families.





Occupation Profile

The squares are the **specialist tasks** used in this occupation. The colours represent the skills cluster families the specialist tasks belongs to.

Each specialist task has an hours worked per week metric that is aggregated to identify a usage rate across the skills cluster families.

Core competencies are common to all jobs. A competency level out of 10 exists for all core competencies. This is derived from O'NET, the Australian Quality Framework (AQF) and the Australian Core Skills Framework.

Program or Project Administrator

ANZSCO 511112

Plans and undertakes administration of organisational programs, special projects and support services.

Direct administrative or support services	Monitor facilities or operational systems	Prepare operational budgets	Manage construction activities
Direct facility maintenance or repair activities	Prepare operational progress or status reports	Develop organisational goals or objectives	Procure materials, equipment or other resources
Manage inventories of products or organisational resources	Plan facility layouts or designs	Hire staff	Analyse data to inform operational decisions or activities
Recommend organisational process or policy changes	Conduct employee training programs		

Core competency level (out of 10)

Numeracy	4	Intermediate
Digital engagement	6	Intermediate
Teamwork	7	Intermediate
Writing	6	Intermediate
Reading	7	Intermediate
Learning	6	Intermediate
Problem solving	5	Intermediate
Oral communication	7	Intermediate
Planning and organising	9	High
Initiative and innovation	8	High

Cluster families used by Program or Project Administrator

	64%	Business operations and financial activities
	10%	Work activities preparation
	9%	Cleaning and maintenance
	8%	Operating procedures and processes
	6%	Data, analytics, and databases
	3%	Human resources

<https://www.nationalskillscommission.gov.au/australian-skills-classification#occupations-511112>

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Skills Profile

The ASC allows users to understand how similar skills group together at three different levels.

This is the **Data, analytics, and databases cluster family** as seen on the ASC interface.

You can select a Skills Cluster, as has been done here for *'Use data to inform operational decisions'* and you see all the Specialist Tasks within that Skills Cluster.

The Data, analytics, and databases cluster family contains these skill clusters.

<p>Data, analytics, and databases</p> 	<p>Analyse market data and trends</p>	<p>Collect samples and analyse results</p>	<p>Create and update databases</p>	<p>Operations research and management</p>	<p>Research or prepare historical objects or data</p>
<p>Undertake laboratory operations and analysis</p>	<p>Undertake research and analyse data</p>	<p>Use data to inform operational decisions</p> <p>SPECIALIST TASKS</p> <ul style="list-style-type: none">Analyse data to assess operational or project effectivenessAnalyse data to determine project feasibilityAnalyse data to identify or resolve operational problemsAnalyse data to inform operational decisions or activitiesAnalyse data to inform staffing decisionsAnalyse operational dataCalculate data to inform organisational operationsConduct quantitative failure analyses of operational dataEvaluate applicable laws and regulations to determine impact on organisational activities		<p>Verify accuracy of data or documents</p>	

<https://www.nationalskillscommission.gov.au/australian-skills-classification#clusters~2101>



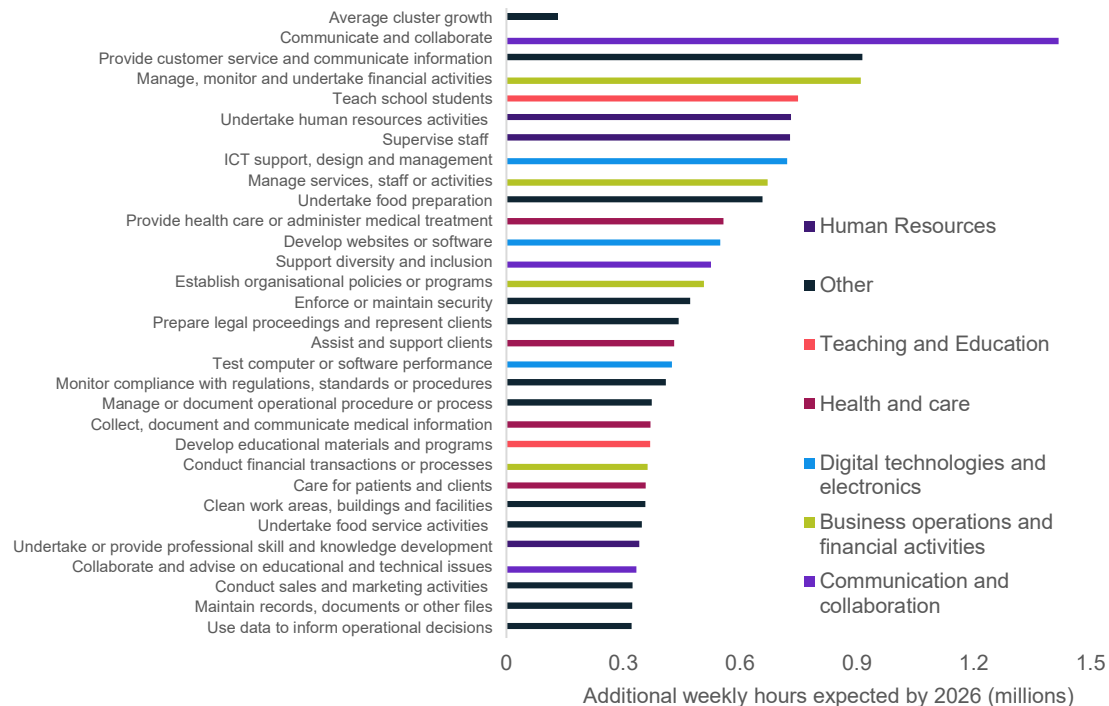


Skills projections at the skills cluster level

By mapping the five year employment projections with the ASC, five-year skills projections can be developed.

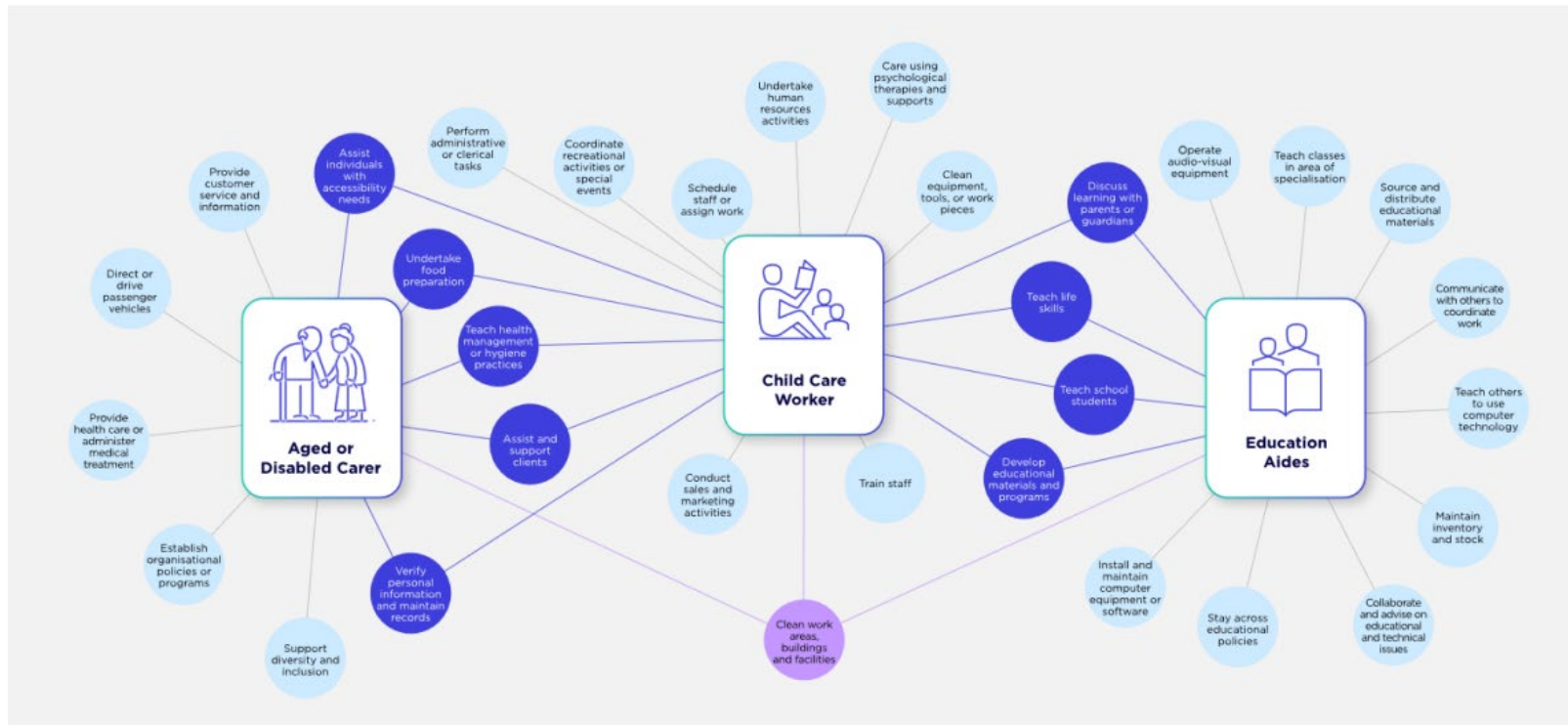
These look at the number of additional weekly hours to be spent on each skills cluster across the workforce.

Skills from the *Digital Technologies, Electronics and Health and Care, Communicate and Collaborate, Business Operations and Financial Activities, Teaching and Education* and *Human Resources* skills cluster families feature heavily among those projected to increase the most in demand between now and 2026.





Example of Transferrable skills





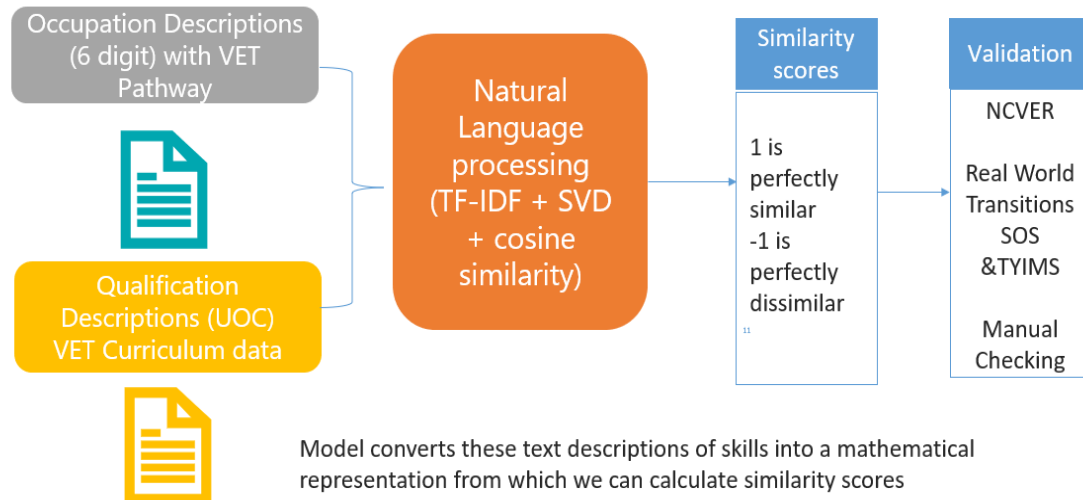
Many to Many occupation to VET model

Using JEDI capability a model has been developed to quantify the degree of similarity between occupation descriptions and VET qualification descriptions using Natural Language Processing.

This model is a **many-to-many concordance**, reflecting the many occupations students should be skilled for as a result of completing a VET qualification.

The validation means results are filtered out that have not occurred in the real world.

This model underpins Job Trainer and the VET Course Priority List.



Model converts these text descriptions of skills into a mathematical representation from which we can calculate similarity scores





Program administrators – relevant qualifications

These two charts illustrate the top pathways to *Contract, Program and Project Administrators* based on the JEDI database (top) and the information on TGA (below), using the number of 2021 completions

There are many qualifications in both lists, but the Certificate III in Business makes the JEDI list but not the TGA list.

In general, JEDI shows that there are many more common qualifications that develop the skills needed for program administrators.

The top 10 qualifications make up over 95% of flows

- There were a total of 18 qualifications in JEDI and 27 in TGA with positive completions



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Program administrators – actual pathways

We are also able to use the VET National Data Asset (VNDA) to see where graduates of these qualifications actually ended up working.

These VNDA results suggests that the actual pathways students take are more diverse than the information in TGA, showing the value of the JEDI database in identifying qualification to occupation links.

Almost two-thirds (64%) of flows into *Contract, Program and Project Administrators* come from the top 15 qualifications

- Note that because of the nature of VNDA, some flows into this occupation with small numbers of completions (or few RTOs) will be suppressed



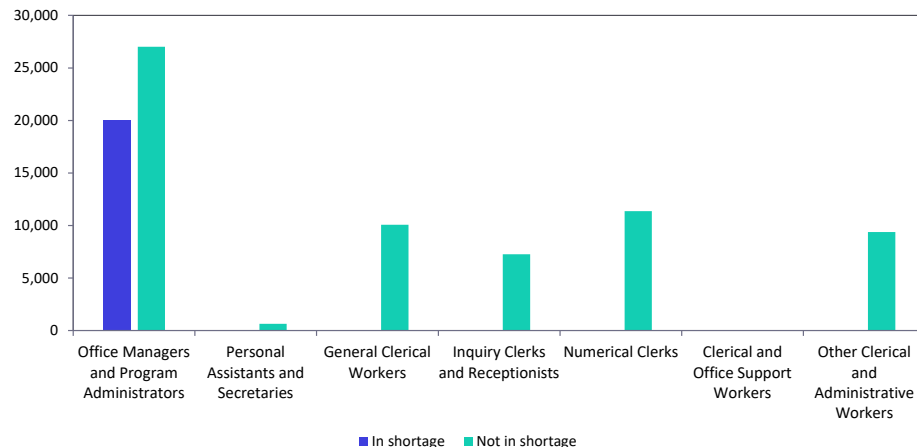
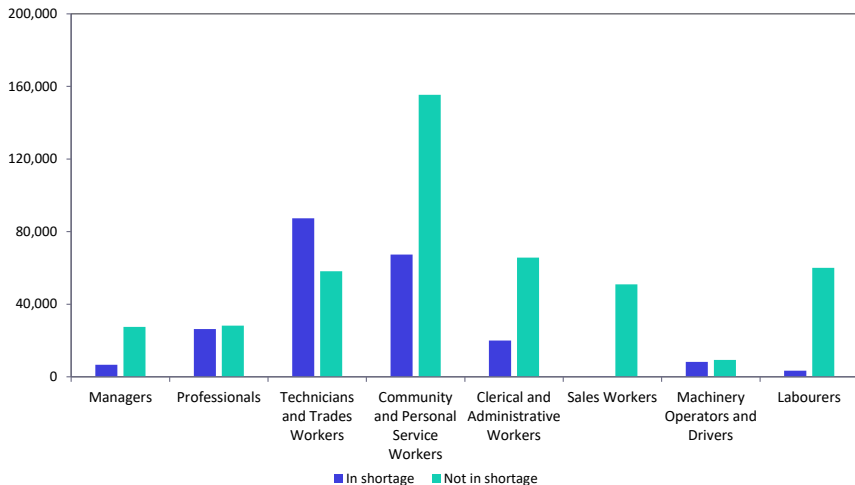


Looking at recent VET activity

We can also combine the Skills Priority List with the data on VET completions.

When looking at broad occupational categories, we see that a majority of VET completions in the technical and trades areas are related to occupations currently in shortage. Overall, this isn't the case for clerical and administrative workers but...

If we look at a more detailed breakdown of clerical and administrative workers, we see that a much higher proportion of graduates in the Office Managers and Program Administrators categories are linked with occupations in shortage.





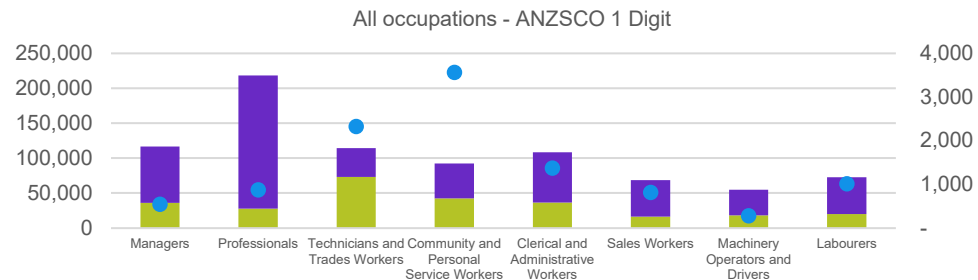
VET completions for occupational groupings

Across the broad occupational categories, Technical and Trades Workers and Community and Personal Service Workers have the highest ratios of completions to current VET employment. Clerical and Administrative Workers is the next closest.

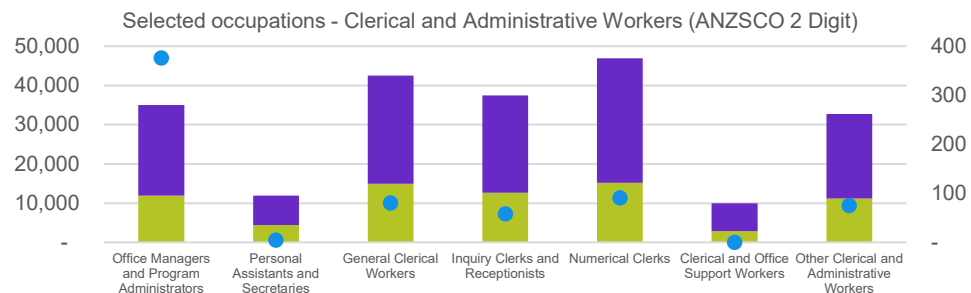
At the more detailed level, completions in qualifications related to Office Managers and Program Administrators are at a higher level than for other Clerical and Administrative groupings.

Unlike technicians and trades and community and personal service workers, licensing requirements and upskilling are unlikely to be the driver of this activity level.

Instead, strong employment growth is the main driver identified (though we have not considered employment dynamics like churn in this presentation.)



■ VET employment ('000, RHS) ■ Non VET employment ('000, RHS) ● Completions (LHS)



■ VET employment ('000, RHS) ■ Non VET employment ('000, RHS) ● Completions (LHS)





Bringing it all together



The 2022 Skills Priority List shows national shortages and strong future growth for contract, program and policy administrators.

The Australian Skills Classification shows the two most important skills cluster families are *Business operations and financial activities* and *Data, analytics, and databases*

Our JEDI database links contract, program and policy administrators to a number of qualifications, including the common Certificate III in Business as well as the more obvious Diploma of Project Management.

Recent completions in these qualifications as a proportion of total employment in related occupations are above the average for VET-relevant occupations, in line with the strong employment growth.

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Questions

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