Australian Government

Jobs and Skills Australia

RTO Typology

Methodology Paper

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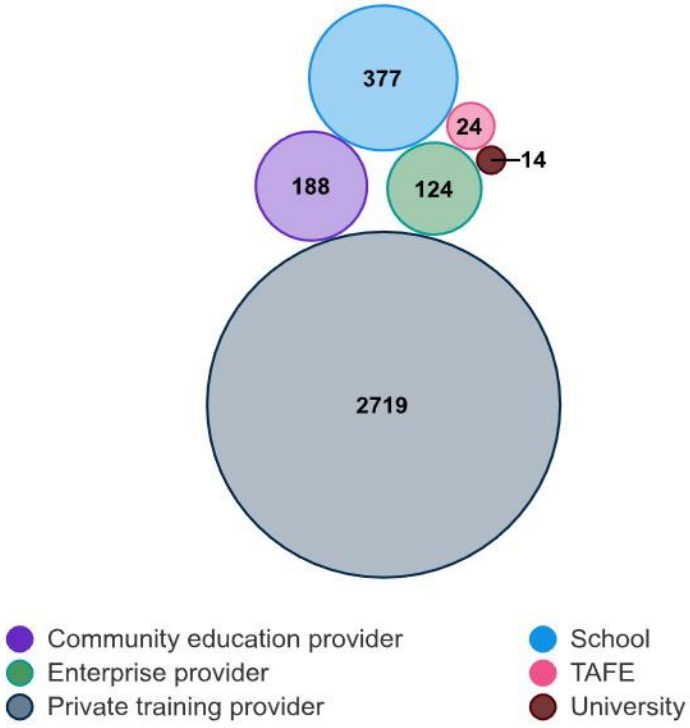
Overview

Introduction

There are over 4,000 Registered Training Organisations (RTOs) delivering Vocational Education and Training (VET) qualifications, apprenticeships and short courses throughout Australia. RTOs are typically grouped together using the existing Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS) provider type classification as outlined in Figure 1. Provider type is largely determined through ownership and funding structure, which creates classifications around TAFE institutes, universities, enterprise RTOs, community organisations, industry and professional associations and schools.

Figure 1: An illustration of the concentration of 'private providers' in the current RTO classification



Source: Jobs and Skills Australia (JSA) analysis, NCVER Total VET Activity 2018-2020

Why is Jobs and Skills Australia developing a new RTO Typology?

One of the functions of Jobs and Skills Australia (JSA) is to provide advice on the adequacy of the Australian system for providing VET, including training outcomes, and research and analysis of RTOs. There are several ways JSA is seeking to deliver on these functions and expectations of stakeholders and government, including:

- working with the Department of Employment and Workplace Relations and the states and territories to support the joint stewardship and decision making of the Australian VET sector under the National Skills Agreement
- developing the VET National Data Asset (VNDA) to measure course level outcomes relating to employment, economic security, reliance on income support and progression to further study. Read more about VNDA
- developing a RTO typology to underpin JSA's research and analysis of the market landscape.

At present it is difficult for JSA to undertake research and analysis of the market landscape and its impact on outcomes achieved for students across VET. This is because the current classification is based on ownership and funding model and means 80 per cent of RTO training providers are in the same category.

The RTO Typology addresses this challenge by dividing the market landscape using a defined set of principles to create groups of like RTOs. There is a prioritisation process to work out what RTOs fit into each of the groups which is explained in detail in this report. In essence the principles and prioritisation process undertaken places more priority on students, that is characteristics like student type, course scope and delivery footprint are prioritised ahead of features like financial characteristics.

The more detailed category of providers will enable greater insight into the structure and operation of the VET system. The RTO Typology will be used by JSA for research purposes to better analyse the VET system. The analysis will be undertaken as part of the VNDA project and will occur in the secure data lab environment operated by the Australian Bureau of Statistics in partnership with JSA and the NCVER. This means that no individual RTO will be identifiable in the data extracted from data lab, rather the 'typology type' will be identifiable and reported on by JSA to government and the public.

Purpose of this paper

The purpose of this report is to set out the original methodology for developing the RTO Typology, outline amendments made as a result of stakeholder co-development processes and indicate how JSA intends to use the RTO Typology to provide advice on the adequacy of the VET system.

JSA will be conducting research and analysis to support the further development and ongoing improvement of the RTO Typology. Part of this involves exploring what is possible, balancing potential design considerations with what can be feasibly delivered whilst ensuring a level of consistency with existing RTO classifications. Stakeholder feedback is vital to support our ongoing improvement process.

RTO Typology development

Principles of design

A set of five core principles shaped the form and structure of the typology. These principles are designed to ensure the typology achieves its purpose, assisting JSA to better analyse the vocational training system. Further, the principles serve as indicators with which to evaluate the typology's effectiveness.

The principles that underpin the typology are:

- **Robust:** clusters should not change rapidly, providing a future-proof foundation that can be maintained over time. [1]
- **Distinct:** features that divide each cluster are distinct and clear.
- **Meaningful:** each segment is large enough to provide useful insight about the VET sector, and the classification overall provides useful groups.
- **Comparable:** the overall number of clusters is manageable, and the clusters are relatively consistent in size, allowing for analysis of clusters to remain relative to each other and balanced.
- **Exclusive:** each RTO should belong to one cluster only (i.e. a RTO can only belong to one category, partition, and segment).

Development process

In developing the typology's framework, the key steps of the methodology are as follows:

- **Developing features**. Key features for each RTO were developed using various data sources and calculations. This list was informed by literature review, stakeholder consultations, and expert input. The final iteration of the RTO Typology had two lists of features:
    - A list to define **partitions** across the classification (Table 3 in Appendix A: Additional method details)
    - A list to develop RTO profiles that were used to define **segments** (Table 4 in Appendix A)
- **Partitioning**. The partitioning of providers was determined – and refined through consultation – based on the list of RTO key features (Table 3 in Appendix A). Partitions are organised into four categories to aid interpretability and use.
- **Segmentation**. The RTO segments were defined either through:
    - pre-determined rules based on a combination of provider type and the distribution of enrolments, or
    - clustering and decision-tree algorithms based on the level of similarity between RTOs drawing from key features (Table 4 in Appendix A).

The Methodology section of this report provides additional details, while additional discussion of the typology's co-development is contained in the Discussion section.

[1] This does not preclude changes in the classification of providers over time, which is expected as scope and student demand shift. Instead, the principle of robustness refers to the definition of clusters themselves remaining stable over time, should the models be re-run on different periods.

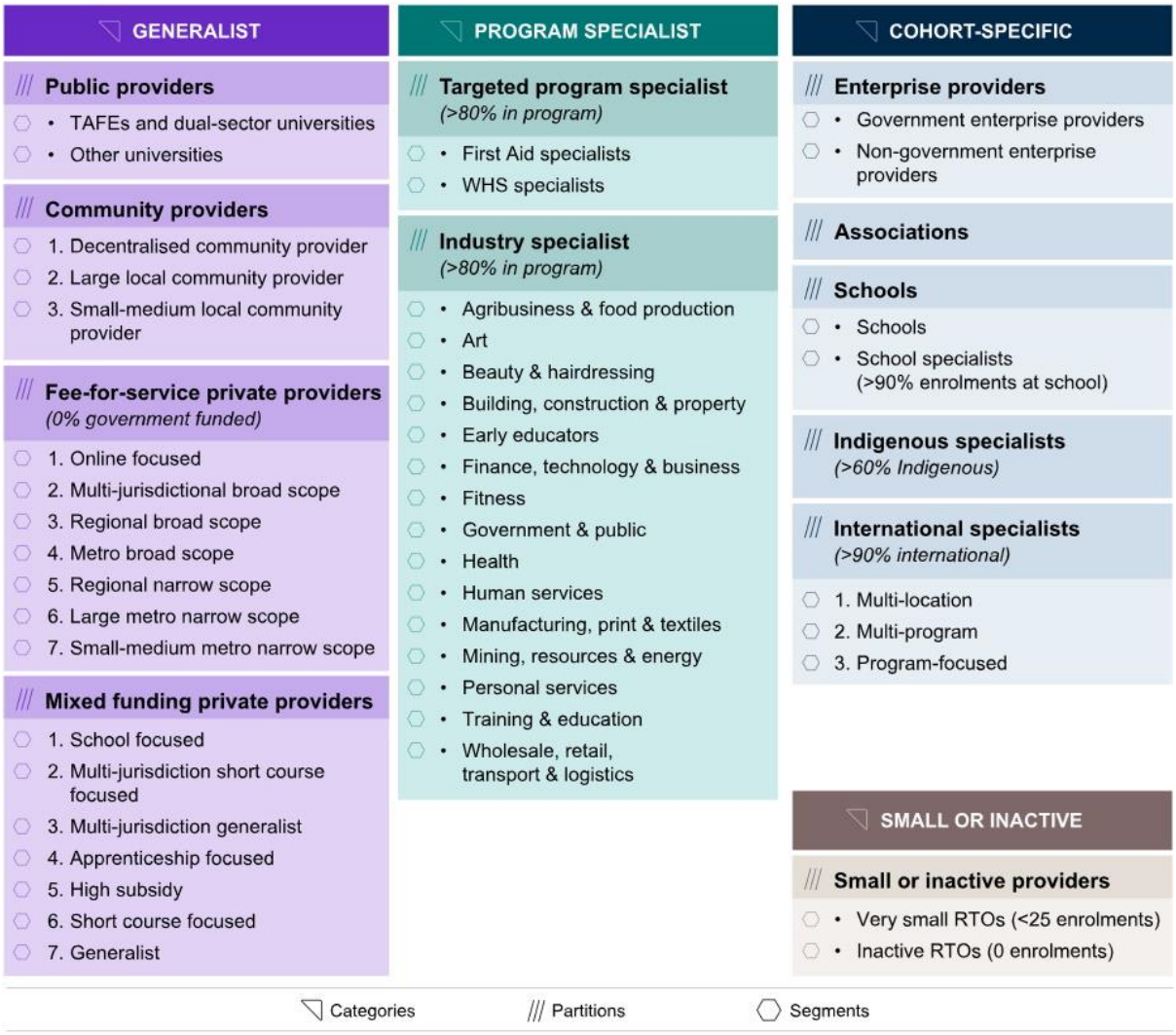
Overview of the structure

Figure 2 is a graphic representation of the RTO Typology structure. Each column represents a category (denoted by ◹) and each box represents a partition (denoted by ///). Within each partition, segments are denoted by ⎔.

The dot points (•) and numbered (e.g. 1, 2, 3) lists represent the different methodological process to develop the segments:

- If the segments are listed by dot points, expert led input was used to further segmentation.
- If the segments are listed using number list, decision tree and clustering algorithms were used for segmentation.
- The partition with no dot points or numbered list (such as Associations and Indigenous specialists), means there is no further segmentation, with the partition and the segment having the same definition.

Figure 2 The breakdown of categories, partitions, and segments



Categories ( )

There are three main categories of provider in the RTO Typology: Generalists, Program-focused providers, and Cohort-specific providers. Conceptually, the categories are formed as groups of partitions, which are the primary driver of categorisation in the typology.

The categories of the typology are:

- **Generalist:** providers that do not have a focus area in terms of subject area or student demographics. Effectively, those providers which offer a relatively wide range of programs to a relatively diverse student base. This category includes public providers, community providers, fee-for-service private providers and mixed funding private providers.
- **Program-focused:** providers that specialise, based on enrolment patterns, in a particular subject area. Program-focused providers include targeted program specialists and industry specialists.
- **Cohort-specific:** providers whose students are largely represented in specific cohorts of student. The cohort-specific providers include associations, enterprise providers, school providers, international specialists, and Indigenous specialists.

Small or inactive RTO is a minor category consisting of only one partition, being small or inactive providers.

Partitions ( )

Partitions are the foundation to the RTO Typology, and the level at which categorisation occurs. There are 13 different partitions in the typology and most partitions are further broken-down into segments.

Based on the definitions of each partition, discussed further in the following Methodology chapter, many providers could reasonably belong to multiple partitions. This runs contrary to the typology's core principle of *exclusivity*, which states that a provider can belong to just one partition. To ensure consistency with this principle, RTOs were categorised in a particular order. The ordering was developed iteratively through several rounds of consultation with key stakeholders. The development process of the partitions is further detailed in the Methodology chapter.

Segments ( )

Segments are the most detailed layer of the typology, further breaking down the partitions into more meaningful and manageable groups of providers. There are a total of 45 provider segments excluding small and inactive providers. The segmentation presented in this report was developed through a process of experimentation and refinement, constrained by JSA's goal of facilitating a more nuanced analysis of the vocational training system and guided by the hands-on experience of key stakeholders. The segments are defined in one of two ways:

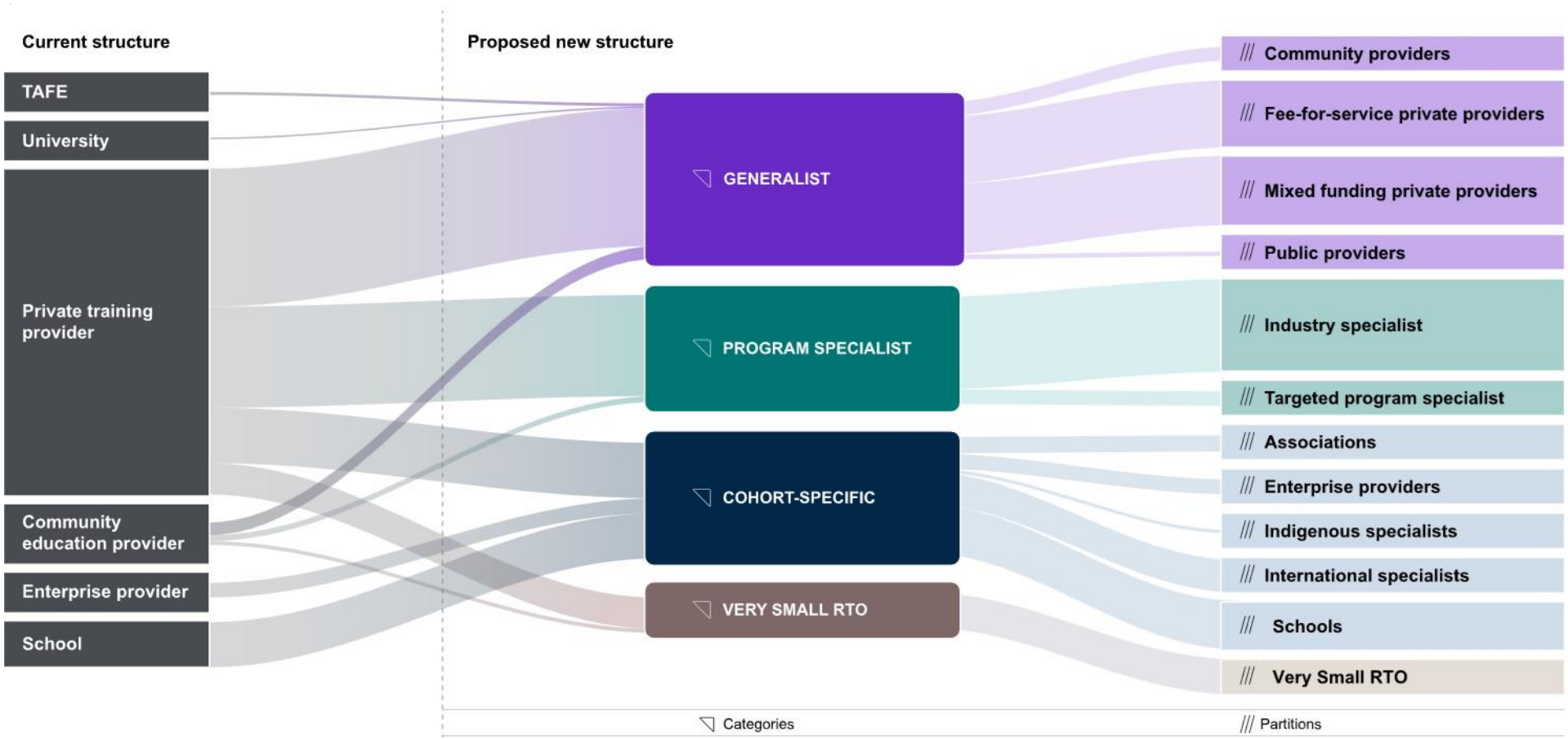
- pre-determined rules based on a combination of provider type and the distribution of enrolments (e.g. RTO type for public providers and the proportion of subject enrolments for targeted program specialists); or
- data-driven classification techniques based on similarities between RTOs, drawing from key provider and student characteristics (for private, community, and international specialist provider groups only).

Appendix B: Summary of the RTO clusters by category provides a summary of the definitions and rules for the RTO segments by category.

RTO Typology structure and impact

Figure 3 illustrates how providers move from the existing RTO type to the RTO Typology. The grouping of partitions and segments in the typology achieves its purpose of creating a manageable and meaningful segmentation of providers to provide a more nuanced analysis of the VET system.

Figure 3 How the RTO Typology reclassifies the training organisation type identifier



Methodology

This chapter sets out the development of the RTO Typology, including its current structure and implementation. It also provides additional detail on its initial construction and refinement based on stakeholder feedback.

Development of partitions

Up-front partitioning is at the core of the classification methodology to reduce noise in the data and ensure interpretability.

As the first step, a list of RTO features (Table 3 in Appendix A) was developed that went into defining partitions. This list was developed based on a literature review, stakeholder feedback, expert input, as well as exploration and iteration in the data. Many partitions reflect the AVETMISS RTO type definitions, as RTO type provided an intuitive 'first cut' of RTOs across the VET system (refer to Appendix A: Additional method details).

Partitions are made on several types of features, such that a single provider could satisfy the criteria for multiple partitions. To maintain exclusivity, partition features are applied in a specific order, so that is clear where a provider will be classified if they fulfil multiple criteria. Table 1 below shows the hierarchy of partitions.

Table 1 Hierarchy of partition rules

Category	Order of partition	Rules
Generalist	1. Public providers	TAFE: RTO type is TAFE (31), or is one of 6 specified dual-sector universities
		Universities: RTO type is University (41, 43 or 45) and not already classified as TAFE
Cohort-specific	2. Association	RTO type is Association (93, 95)
	3. Enterprise	RTO type is Enterprise (51 or 53)
	4. School (based on RTO type)	RTO type is School (21, 25, 27)
Small & inactive	5. Small & inactive RTOs	2018-2020 average annual enrolments <25
Cohort-specific	6. International specialist	>90% of enrolments 2018-2020 have funding type 'international fee-for-service'
	7. Indigenous specialist	>60% of enrolments 2018-2020 are indigenous
	8. School (based on School specialist)	>90% of enrolments 2018-2020 are at school
Program focused	9. Program specialist	>80% of enrolments 2018-2020 in selected programs
	10. Industry specialist	>80% of enrolments 2018-2020 in selected training packages excluding targeted programs, with adjustments to align to proposed industry clusters

Category	Order of partition	Rules
Generalist	11. Community	RTO type is Type 61 in either Total VET Activity or training.gov.au OR their RTO type in Total VET Activity is 99 and their RTO type in training.gov.au is 91 and is not already classified in prior steps.
	12. Fee-for-service	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps.
	13. Mixed funding	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps.

Note: The complete list of rules for each segment and partition is contained in Appendix B: Summary of the RTO clusters by category.

Order of partitions

As described above, the ordering of partitions is critical to maintaining the principle of exclusivity, and has significant impacts on the final classification. Important decisions on the ordering of partitions include:

- Most provider type partitions are separated out first, such that after **step 4**, only RTOs that are identified as community-based adult education providers or privately operated registered training organisation remain. This is in keeping with the intent of the classification to primarily break down the undifferentiated 'generalist' provider types. All other provider types are worth isolating as their own segments: TAFEs and universities have specific funding models, enterprise providers and schools have notable access restrictions, and associations have a different business model to other providers.
- Community providers are partitioned in **step 11**, after cohort specific and program specialists are identified. This was partly to preserve the integrity of these specialist provider groups, where provider behaviour is considered more important than differentiating community providers from private providers.
- Small or inactive providers were separated at **step 5**, effectively applying across all community providers and private providers. This is intended to reduce noise across the classification, in keeping with the overarching purpose to enable market analysis.
- **Steps 12 and 13** separate private providers into mixed funding and fee-for-service providers. This is partly because funding model and relationship to government are important features that should be accounted for, but this is not strictly necessary as a partition since the proportion of students with subsidies is already included within the clustering and decision-tree algorithms. The intention was also to break up the non-specialist private providers as a 'remainder' category, ensuring that each group was then small enough for sensible clustering.

Organisation into categories

Partitions were organised into four categories to aid interpretability and use. They are defined by qualitative assessments which were tested through consultation. The categories are:

- **Generalist**: these providers do not have a focus in terms of subject area or demographics, so any student can go to them for a wide range of programs. This

includes public providers, community providers, fee-for-service private providers and mixed funding private providers.

- **Program focused**: these providers are specialist in a particular subject area, and so limit their market to that area. This includes targeted program specialists and industry specialists.
- **Cohort specific**: these providers have defined access criteria that limit their market to specific cohorts. This includes associations, enterprise providers, schools, international specialists, indigenous specialists and school specialists.
- **Small & inactive providers**: these providers are separated out to avoid introducing noise into analysis.

Thresholds for partitions

Several partitions are defined by thresholds of student activity, including cohort specific providers in **steps 6-8** in Table 1, program specialists in **steps 9-10**, and the separation of private providers in **steps 12-13**. Thresholds were determined based on examination of the distributions of providers by proportion of students with the relevant feature.

Data for these thresholds were sourced using existing databases such as training.gov.au, Your Career and NCVER's total VET activity and apprentices and trainees. Thresholds were tested through stakeholder consultation.

As the thresholds were rounded to improve meaningfulness and useability, it is important to consider the breakpoints are not considered to be prescriptive rules. RTOs with the edges of these thresholds (potentially those within 10 percentage points of the thresholds) could easily belong to either partition. These thresholds should also be tested through statistical analysis and stakeholder consultation at various intervals to maintain the typology in the future.

Development of segments

After the partitions were created, it was necessary to breakdown some of the larger ones into segments that well defined and interpretable. Some segments were determined through up-front partitioning, while others were refined with expert led input.

Figure 2 is a graphic representation of the typology structure. Each box represents a partition. The dot points and numbered lists represent the different methodological process to develop the segments. If the segments are listed by dot points, expert led input was used to further segment the partition. Boxes with numbered lists were segmented using decision tree and clustering algorithms. The boxes with no dot points or numbered list, means there is no further segmentation (such as Associations), with the partition and the segment having the same definition.

Expert-led development of segments

Some partitions were easily segmented further using the expert-led approach as the partitions themselves had intuitive, meaningful categories easily understood by the sector. These included segments such as TAFE and Dual-sector universities, Other universities,

Schools, School specialists, Very small RTOs and Inactive RTOs.[2] The Program specialist segments were developed through consultation with stakeholders.

Through this process Targeted program specialists in First Aid and Workplace Health and Safety were separated from other industry specialist segments to avoid skewing results, as they mainly deliver short courses over qualifications. After obtaining advice from stakeholders, Dual-sector universities were separated from Other universities and combined with TAFEs as these providers operate like TAFEs and are considered by the sector as TAFEs.[3] The method to create the segments requiring statistical modelling, the numbered list segments, is described in the next section.

RTO features to develop RTO profiles

Clustering and decision tree algorithms were used to separate large generalist partitions into smaller segments. In order to do so, a list of RTO features was used to develop RTO profiles as the input for clustering and decision-tree algorithms, outlined in Table 4 Appendix A.

These features were broadly divided into customer, location and product measures, and considered the total number, proportion or diversity of the given feature. They were produced and refined with the experts noted in the previous section. The development of the features was also informed by a literature review which sought to explain what common characteristics are used in international-equivalent VET sectors. Diversity measures are calculated using the Shannon Index which is described below.

A wide range of VET experts were consulted on defining the segments, including but not limited to: RTO peak bodies, regulators, federal and state government bodies and research organisations (such as National Centre for Vocational Education Research, NCVER). Subject matter experts within consultancy firm Nous and JSA were also consulted.[4]

[2] For School specialist, a threshold of over 90 per cent of enrolments currently in school (RTO type must be School) was created. Thresholds of student enrolments for small and inactive providers was defined using TVA data on the number of distinct enrolments, averaged between 2018 and 2020. Small providers were those with less than 25 enrolments and inactive providers had zero enrolments.

[3] First Aid in particular was raised by stakeholders as frequently distorting statistics, such as the amount of training delivered through community providers. By placing dual-sector universities with TAFEs, this also prevented data skews that made university enrolments look larger on average, when instead there were two distinct groups of larger, dual-sector universities and smaller other universities.

[4] Nous Group Pty Ltd (Nous) was engaged in March 2022 to assist with creating the RTO Typology. Nous was responsible for building the first iteration of the model and conducting two consultations sessions to assist with the development of the Typology and obtaining feedback from stakeholders. The final report and methodology paper was delivered to the NSC in November 2022.

Discussion

Collaborative development of the typology

Substantial improvement to the applicability and usability of the typology has occurred since its initial creation in mid-2022. This section outlines the stages of the project's evolution. The typology was augmented in each iteration through a co-development process with various key stakeholders which include state and federal government organisations as well as peak bodies in the sector.

Development of the typology structure

The initial structure of the RTO Typology was much simplified from the current iteration, being only minimally informed by expert input. It contained two layers in the hierarchy (partitions and segments) without the initial category layer. There were no program-focused specialists and private providers were grouped together with Community and Enterprise providers. Mixed funding and Fee-for-service private providers dominated the partitions in the initial structure. Although broken-down further using data-driven clustering techniques, the interpretability—and therefore usefulness for analysis—of the typology was limited.

Bringing together expert opinion from internal and external stakeholders, the typology was updated to add additional structure and align better with the real-world organisation of the system. Under this updated structure, a third layer of the hierarchy was introduced grouping together partitions based on the features most critical to those providers. For example, one category comprised private and community providers split into three partitions based on the share of government subsidised enrolments. This iteration also introduced the program specialists, although comprised of just three partitions (online, foundational, and short courses).

This structure was further refined to better suit the purpose of sector understanding and analysis through a redesign of the top layer to what it is now, with Generalists, Program-focused providers, and Specialists. Program-focused providers also underwent a rethink based on input from our stakeholders, removing the foundation and short-course specialist partitions and introducing the subject area specialists.

Key consultation-driven refinements

Nous undertook a final round of consultation with this version in late-2022, receiving several key inputs that brought the typology in-line with its current structure. The response from stakeholders was largely positive in this round. Comments reflected on its usefulness for their own analysis as well as the meaningful lens through which the typology presents the training system. Several pertinent changes to the overall structure were made in response to the feedback received: separating Community providers as an additional partition in Generalists; removing online specialists; splitting industry and program specialising providers; and aligning the industry specialisations better with Jobs and Skills Councils.

At this stage the project was handed over from Nous to JSA. An additional round of consultation was held in mid-2023 to ensure the changes made aligned with the expectations of stakeholders. This version of the typology was well received, and several relatively minor changes were proposed. JSA has further updated the model including introducing the distinction between Government and non-Government Enterprise provider (segments within the Enterprise provider partition), as well as refining the data-driven clustering algorithm for International specialists. Additional feedback received but not actioned is discussed in the following section.

Limitations and opportunities

Some potential features that could have been used to create RTO groupings were not pursued due to scope and suitability, as well as data availability and timing constraints.

Financial characteristics and student outcomes

Exploration of how financial characteristics and prices are impacted by various provider features—such as jurisdiction, government funding, specialisation or complementary business models—is beyond the scope of the Typology methodology. Student characteristics and outcomes—such as employment outcomes, further study after training and satisfaction with training—are also not used as metrics to partition and segment the RTOs. Future analysis may consider the interaction between provider segment using the RTO Typology and students' outcomes, although care should be taken in ensuring a robust and fair comparison with and across different provider types.

Business operating models and ownership

When developing the structure of the RTO Typology, JSA decided to focus more on student and course profile characteristics and RTO type, rather than business operating models and ownership.[5] As such, for-profit status is not directly represented in the typology's structure, although nonprofit providers are prevalent across a number of partitions, including Indigenous specialists, Community providers, Associations (in addition to Public providers and Schools).[6] The typology also does not partition Indigenous-owned providers, as distinct from providers whose business is centred on provision to Indigenous students.

JSA believes a typology with a focus on business operating models and ownership would look very different to the current RTO Typology. RTOs with similar business model and ownership structure are distributed across the current typology, contained in a variety of partitions and segments. JSA is planning to conduct further research and analysis to examine the ownership and business models of RTOs (e.g. profit/not for profit) within each partition and segment, once data become available.

Next steps

The RTO Typology further refines the current classification of training providers, enabling a more nuanced understanding of the VET system. JSA is open to researching the ability to

[5] Very broad characteristics around funding type was used to distinguish Fee-for-service and mixed funding private providers (percentage of government funded enrolments) and create the 'High subsidy' segment within mixed funding private providers.
[6] As indicated by the Australian Charities Register: Search for a charity | ACNC

integrate additional characteristics into the typology. In addition, movement of providers that reflects changing focus and student demand may create imbalances in the current structure. As industry structure and the cluster definitions are likely to change, these segments may also be adjusted over time. As such, the classification will be reviewed at regular intervals to ensure its suitability and usefulness in understanding of the training system.

Disclaimer

The Registered Training Organisation (RTO) Typology is a product of Jobs and Skills Australia (JSA), within the Commonwealth of Australia. With the exception of the Commonwealth Coat of Arms, JSA's logo, any images or photographs, any material protected by a trade mark and where otherwise noted, the content of the RTO Typology is licensed under the Creative Commons Attribution 4.0 International Licence, CC BY 4.0 licence. Please note that this CC BY licence includes a disclaimer of warranties and liabilities in favour of the Commonwealth of Australia.

The RTO Typology includes information from the following entities. JSA has modified some or all of this information, and the following entities have not approved, endorsed or tested these modifications:

- National Centre for Vocational Education Research's Total Vocational Education and Training (VET) students and courses, and Apprentices and trainees.
- Vocational Education and Training database at training.gov.au
- MySkills, now a part of Your Career at yourcareer.gov.au/learn-and-train/myskills

Jobs and Skills Australia supports and encourages the dissemination and exchange of information provided in the RTO Typology. Use of, including to copy, redistribute, mix, transform, or build upon all, or any part, of the RTO Typology must include the following attribution: Registered Training Organisation Typology, Jobs and Skills Australia, Commonwealth of Australia. Used under Creative Commons BY 4.0 licence.

Glossary

The glossary is a compilation of Australian vocational education and training (VET) terms and acronyms, adapted from National Centre for Vocational Education Research's (NCVER's) *Glossary of VET*[7]. It includes both current and historical terms, concepts and other abbreviations found in Australian VET research, policy and data.

Term	Definition
Accredited courses	Accredited courses have been assessed by the Australian Skills Quality Authority or a state regulator (i.e., the Victorian Registration and Qualifications Authority and the Training Accreditation Council in Western Australia) to meet the Standards for VET Accredited Courses 2021 as well as the Australian Qualification Framework. All accredited courses are listed on the national register website at training.gov.au
AQF	The Australian Qualifications Framework defines the level of nationally recognised training from Certificate I courses to Doctorates.
AVETMISS	The Australian Vocational Education and Training Management Information Statistical Standard is a national data standard which ensures the consistency and accuracy of VET information and covers the national VET data collections.
Current RTOs	Current Registered Training Organisations (RTOs) are those currently delivering training products and also includes RTOs in administration/liquidation, those where re-registration is pending, and those which are suspended.
Delivery locations	Locations of physical delivery of training. Can be an established campus, a temporary classroom or other learning setting.
External delivery	The client does not primarily attend a physical location but instead undertakes training in their own time and location using training materials that are provided online or by correspondence. The client does not usually have to undertake training at a particular time. This type of training is often referred to as self-paced learning. Contact with the trainer is usually limited to feedback on submitted work.
Fee-for-service training	Training for which most or all of the cost is borne by the student or a person or organisation on behalf of the student.
Internal delivery	The student and trainer attend any permanent or semi-permanent training location (e.g. workshop, laboratory, simulator and classroom-based training) even when the training is delivered using video or internet links in real time.
Your Career	Australian Government website providing information about VET study and career options. Formerly called MySkills, this typology has drawn on information from the site: yourcareer.gov.au/learn-and-train/myskills
Nationally recognised training	Training that leads to vocational qualifications and credentials that are recognised across Australia. Only registered training organisations (RTOs) that meet government quality standards can provide nationally recognised training. Nationally recognised training includes accredited courses, endorsed training package qualifications, training package skill sets and associated subjects.

[7] The online version of the NCVER glossary is updated on an ongoing basis and is available at: https://glossary-vet.voced.edu.au/

NCVER	National Centre for Vocational Education Research. An Australian Government agency which produces research on VET and manages many of Australia's VET data sets and assets.
RTO	Registered Training Organisation. Training providers registered by the Australian Skills Quality Authority (ASQA), or a state registering and accrediting body, to deliver training and/or conduct assessments and issue nationally recognised qualifications in accordance with the Australian Quality Training Framework (AQTF) or the VET Quality Framework (VQF).
Short course	A course of vocational education and training.
training.gov.au	training.gov.au is the national register of VET, as required by the National Vocational Education and Training Regulator Act 2011. Information held on the national register includes Nationally Recognised Training (NRT) and Registered Training Organisations (RTOs) that are approved to deliver nationally recognised training.
Training Package	Training packages define the competencies required by different occupations and industries and describe how these competencies may be packaged into nationally recognised and portable qualifications that comply with the Australian Qualifications Framework, or a group of industries. Each training package is made up of three components; units of competency, qualifications framework levels of education, and assessment guidelines.
Typology	The study of types or the systematic classifications of the types of something according to their common characteristics.
Workplace-based delivery	Includes training activity conducted in the workplace, irrespective of whether it is conducted by the training organisation or the employer. For example, industrial/work experience, field placement, or fully on-job training or structured workplace training delivered at a place of employment.

Appendix A: Additional method details

AVETMISS RTO Type definitions

As discussed in the Methodology section, some of the rules surrounding partitions and segments are based on the training organisation type identifier. Table 2 outlines the codes referenced in the summary tables regarding RTO type. The national register of VET (training.gov.au) contains information on each RTO type identifier. These codes are referenced later in the summary of RTO Typology tables in Appendix B: Summary of the RTO clusters by category.

Table 2 The AVETMISS RTO type definitions and their corresponding codes

RTO Type Code	Training organisation type identifier
	Secondary school
21	School – government
25	School – catholic
27	School – independent
	TAFE, skills institute or polytechnic
31	Technical and further education institute or similar public institutions
	University
41	University – government
43	University – non-government catholic
45	University – non-government independent
	Enterprise
51	Enterprise – government
53	Enterprise – non-government
	Community-based adult education
61	Community-based adult education provider
	Other training provider
91	Private education/training business or centre: privately operated registered training organisation
93	Professional association
95	Industry association
97	Equipment and/or product manufacturer or supplier
99	Other – not elsewhere classified

Source: NCVER 2016, *AVETMISS data element definitions: edition 2.*3, NCVER, Adelaide.

Features used in partitioning

Table 3 Features used in partitioning

Feature	Detail	Threshold
RTO Type	RTO type is ‘TAFE’, ‘University’, ‘School’, ‘Enterprise provider’, ‘Industry Association’, ‘Professional Association’	Not applicable
n Students	Number of distinct encrypted client IDs, averaged 2018-2020	25
Percent at School	If RTO type is school, then 100% else proportion of enrolments where at school flag is ‘Y’, averaged 2018-2020	>90%
Percent Indigenous	Proportion of enrolments where indigenous status is ‘Indigenous’, averaged 2018-2020	>60%
Percent International	Proportion of enrolments where funding source description is 'International fee-for-service', 'International fee-for-service - offshore', 'International fee-for-service - onshore', averaged 2018-2020	>90%
Specialists	Proportion of enrolments that meet conditions within program training packages, program codes, program names or subject codes	>80%
Percent Subsidy	Proportion of enrolments where funding source description is 'Commonwealth specific funding', 'Commonwealth and state general funding' or 'State specific funding', averaged 2018-2020	=0%

Features used to develop RTO profiles

Key features for each RTO were developed using various data sources, such as training.gov.au, Your Career and NCVER's total VET activity and apprentices and trainees. The list of features below developed the RTO profiles that were used to define segments.

Table 4 Features used to create RTO profiles

Feature	Detail
Number of students	Number of distinct enrolments, averaged 2018-2020
Per cent international	Proportion of enrolments where funding source description is 'International fee-for-service', 'International fee-for-service – offshore', 'International fee-for-service – onshore', average 2018-2020
Per cent regional	Proportion of enrolments where student remoteness is 'Remote Australia', 'Very remote Australia', 'Outer regional Australia' or 'Inner regional Australia', averaged 2018-2020
Per cent at school	If RTO type is school, then per cent is 100, otherwise it is the proportion of enrolments where at school flag is 'Y', averaged 2018-2020
Per cent Indigenous	Proportion of enrolments where Indigenous status is 'Indigenous', averaged 2018-2020
Per cent disability	Proportion of enrolments where disability status is 'With a disability', averaged 2018-2020
Per cent employed	Proportion of enrolments where labour force status is 'Full-time employee', 'Part-time employee', 'Self-employed – not employing others', 'Self-employed – employing others', 'Employed – unpaid family worker in family business', 'Not-specified', or 'Not applicable', averaged 2018-2020
Per cent apprentice	Proportion of enrolments where apprentice status is 'Apprentice/trainee', averaged 2018-2020
Per cent subsidy	Proportion of enrolments where funding source description is 'Commonwealth specific funding', 'Commonwealth and state general funding' or 'State specific funding', averaged 2018-2020.
Per cent online	Proportion of enrolments where delivery mode name is 'External Only', averaged 2018-2020
Per cent short course	Proportion of enrolments where the program type is 'Unknown or 'Other courses', averaged 2018-2020.
Average subject enrolments	Average number of enrolments per distinct enrolment, averaged 2018-2020
Number of programs	Number of distinct program codes, averaged 2018-2020
Diversity of Australian Qualifications Framework (AQF)	Shannon Index of program level of education (with frequency being calculated as distinct program codes) across 2018-2020

Feature	Detail
Diversity of training package scope	Shannon Index of program level of education (with frequency being calculated as distinct program codes) across 2018-2020
Delivery locations	Number of distinct delivery postcodes, averaged 2018-2020
Jurisdictions	Number of jurisdictions in which the providers has >0 enrolments in a calendar year, averaged 2018-2020

Note: Calculation of the Shannon Index for feature diversity is discussed further below.

Feature diversity: the Shannon index

Several features are defined based on their underlying 'diversity'. A more diverse feature would have enrolments equally shared across each category, while the less diverse feature would have all enrolments focused on a single category.

The Shannon Index is used to calculate diversity.[8] As an example, for diversity of training packages, the Shannon Index considers the total number of distinct program codes for each RTO and how evenly this is distributed across all available training packages for each RTO.

The Shannon Index is calculated as follows:

$$Shannon\ Index\ (H) = -\sum_{i=1}^{n} p_i \ln p_i$$

for each category i of n total categories, p_i represents the proportion of that category represented among all categories.

In the context of the example identified above:

- p_i represents the proportion of distinct program codes provided by the RTO within a given training package. Calculated as the number of distinct program codes within the training package divided by the total number of distinct program codes provided by the RTO.
- n is the total number of different training packages.

A higher Shannon Index indicates a higher degree of diversity, where 0 indicates that there is only 1 choice available.

[8] Shannon, C. E. (1948) *A mathematical theory of communication*. The Bell System Technical Journal, 27 (3)

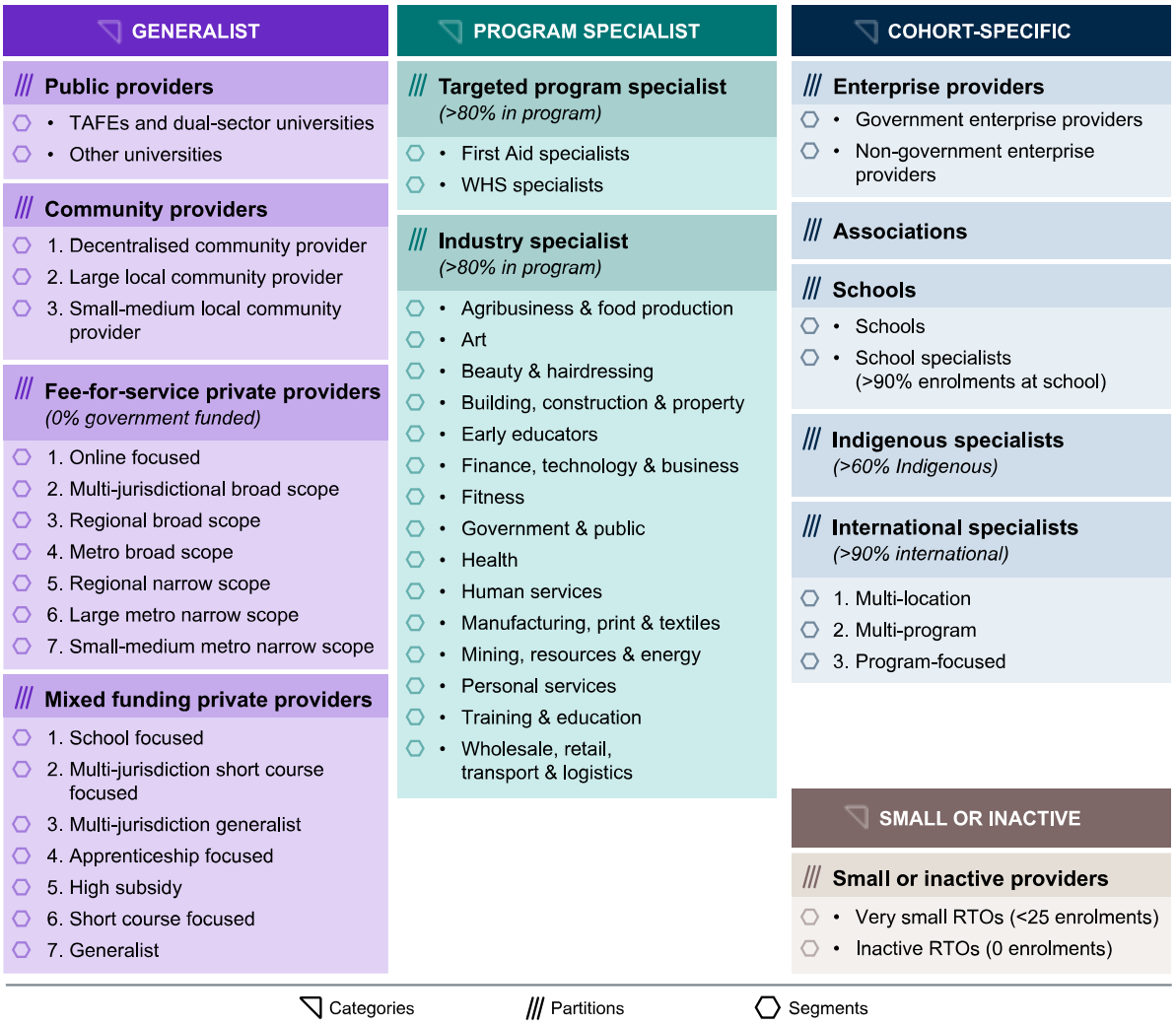
Appendix B: Summary of the RTO clusters by category

The following tables represent the definitions for the RTO Typology. There are three tables, one for each category and each row represents a different segment. The partition and segment names are labelled, along with the rules (a combination of features and the AVETMISS RTO definitions in Appendix A: Additional method details) that constitute the segment.

The tables also contain summary statistics, particularly number of RTOs and average annual enrolments per cluster. The number of RTOs that fall within a segment are produced from the model, and the average number of enrolments per cluster per year is the average enrolment number for that specific row. The sources of these statistics are from NCVER's data collections of unit level records from Total VET students and courses with identified RTOs, and apprentice and trainee status of students.

To assist in reading this section, the hierarchy of the RTO typologically is represented below.

Figure 4 The breakdown of categories ( ), partitions ( ), and segments (dot point or numbered list)



Generalist RTO clusters

Table 5: Detailed description of segments in the 'Generalist' category

Partition (⫽)	Segment (⎔)	Rules	Number of RTOs[9]	Average enrolments per cluster per year[10]
Public providers	TAFEs and dual-sector universities	RTO type is TAFE (31), or is one of 6 specified dual-sector universities	30	5,262,400
Public providers	Universities	RTO type is University (41, 43 or 45) and not already classified as TAFE	10	29,900
Community providers	Decentralised community providers	RTO type is Type 61 in either Total VET Activity or training.gov.au OR their RTO type in Total VET Activity is 99 and their RTO type in training.gov.au is 91, and is not already classified in prior steps ≥15.33 delivery locations	30	377,800
Community providers	Large local community providers	RTO type is Type 61 in either Total VET Activity or training.gov.au OR their RTO type in Total VET Activity is 99 and their RTO type in training.gov.au is 91, and is not already classified in prior steps <15.33 delivery locations ≥297 students	40	117,000
Community providers	Small-medium local community providers	RTO type is Type 61 in either Total VET Activity or training.gov.au OR their RTO type in Total VET Activity is 99 and their RTO type in training.gov.au is 91, and is not already classified in prior steps <15.33 delivery locations <297 students	45	28,700

[9] Number of RTOs is rounded to the closest 5.
[10] Average enrolments per cluster per year is rounded to the closest 100.

Partition (⫽)	Segment (⬡)	Rules	Number of RTOs[9]	Average enrolments per cluster per year[10]
Fee-for-service providers	FFS online focused	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps ≥35% online	70	363,600
Fee-for-service providers	FFS multi-jurisdictional broad scope offering	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <35% online ≥20% Diversity AQF ≥2 jurisdictions	85	359,900
Fee-for-service providers	FFS regional broad scope offering	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <35% online ≥20% Diversity AQF <2 jurisdictions ≥35% regional	65	224,100
Fee-for-service providers	FFS metro broad scope offering	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <35% online ≥20% Diversity AQF <2 jurisdictions <35% regional	125	278,600

Partition (⫻)	Segment (⬡)	Rules	Number of RTOs[9]	Average enrolments per cluster per year[10]
Fee-for-service providers	FFS regional narrow scope offering	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <35% online <20% Diversity AQF ≥61% regional	50	66,100
Fee-for-service providers	FFS large metro narrow scope offering	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <35% online <20% Diversity AQF <61% regional ≥332.67 students	100	272,700
Fee-for-service providers	FFS small-medium metro narrow scope offering	RTO type is private (91, 97, 99) and 0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <35% online <20% Diversity AQF <61% regional <332.67 students	75	24,200
Mixed funding providers	School focused mixed funding	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps ≥28% at school	55	723,600

Partition (⫽)	Segment (⬡)	Rules	Number of RTOs[9]	Average enrolments per cluster per year[10]
Mixed funding providers	Multi-jurisdiction short course focused mixed funding	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <28% at school ≥2 jurisdictions ≥22% short courses	100	1,193,000
Mixed funding providers	Multi-jurisdiction mixed funding generalists	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <28% at school ≥2 jurisdictions <22% short courses	140	1,851,500
Mixed funding providers	Apprenticeship focused	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps. <28% at school <2 jurisdictions ≥39% subsidised ≥22% apprentice	55	197,200
Mixed funding providers	High subsidy generalists	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps. <28% at school <2 jurisdictions ≥39% subsidised <22% apprentice	105	499,800

Partition (⫻)	Segment (⬡)	Rules	Number of RTOs[9]	Average enrolments per cluster per year[10]
Mixed funding providers	Short course focused mixed funding	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps <28% at school <2 jurisdictions <39% subsidised ≥38% short courses	70	281,200
Mixed funding providers	Mixed funding generalists	RTO type is private RTO (91, 97, 99) and >0% of students have funding type 'Commonwealth and state general funding', 'Commonwealth specific funding', or 'State specific funding', and is not already classified in prior steps. <28% at school <2 jurisdictions <39% subsidised <38% short courses	55	318,800

Program specialist clusters

Table 6: Detailed description of segments in the 'Program specialists' category

Partition (⫻)	Segment (⎔)	Rules	Number of RTOs[11]	Average enrolments per cluster per year[12]
Targeted program specialists	First Aid specialists	>80% of enrolments (2018-2020) in selected programs where: • subject code matches substring 'HLTAID'	100	2,275,600
Targeted program specialists	WHS specialists	>80% of enrolments (2018-2020) in selected programs where: • program name matches exact 'Advanced Diploma of Work Health and Safety', 'Certificate III in Work Health and Safety', 'Diploma of Work Health and Safety' • subject code matches substring 'WHS'	20	28,400
Industry specialists	Agribusiness & Food Production specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring 'ACM', 'AHC', 'AMP', 'FWP', 'SFI', 'FBP', 'RGR' • program name matches exact 'Diploma of Equitation Science'	30	93,900
Industry specialists	Art specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring 'CUA' • program name matches exact 'Advanced Diploma of Acting for Contemporary Screen Media', 'Advanced Diploma of Screen Acting'	25	19,200
Industry specialists	Beauty & Hairdressing specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring 'SHB'	40	90,200

[11] Number of RTOs is rounded to the closest 5.
[12] Average enrolments per cluster per year is rounded to the closest 100.

Partition (⫽)	Segment (⎔)	Rules	Number of RTOs[11]	Average enrolments per cluster per year[12]
Industry specialists	Building, Construction & Property specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring 'CPC, 'CPP', 'UEE', 'NWP' • program name matches exact 'Certificate III in Real Estate Practice', 'Certificate IV in Property Services (Real Estate)', 'Certificate IV in Real Estate Practice', 'Course in Real Estate Certificate of Registration', 'Course in Real Estate for Agents' Representatives', 'Diploma of Property (Agency Management)' • program name matches substring 'Civil', 'Traffic' • program name does not include the substring 'Mining'	120	666,600
Industry specialists	Early Educators specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches exact 'CHC30113', 'CHC30121', 'CHC40113', 'CHC50113', 'CHC50121', 'CHC50213', 'CHC50221'	60	244,900
Industry specialists	Finance, Technology & Business specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring 'BSB', 'FNS', 'ICT' • program name does not include 'Advanced Diploma of Work Health and Safety', 'Certificate III in Work Health and Safety', 'Diploma of Work Health and Safety'	110	353,900
Industry specialists	Fitness specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring 'SIS' • program name matches exact 'Advanced Diploma of the Pilates Method', 'Certificate IV in Pilates Matwork and Reformer', 'Certificate IV in Yoga Teaching', 'Diploma of Clinical Pilates', 'Diploma of Polestar Pilates Comprehensive Instruction', 'Diploma of Polestar Pilates Comprehensive Instruction Method', 'Diploma of Professional Pilates Instruction', 'Diploma of Purna Yoga Management', 'Diploma of Purna Yoga Movement'	40	423,800

Partition (⫻)	Segment (⎔)	Rules	Number of RTOs[11]	Average enrolments per cluster per year[12]
Industry specialists	Government & Public specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘CSC’, ‘DEF’, ‘FSK’, ‘LGA’, ‘PIA’, ‘POL’, ‘PSP’, ‘PUA’	15	50,600
Industry specialists	Health specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘HLT’ • program name matches exact ‘Certificate IV in Bowen Therapy’, ‘Diploma of Specialised Bowen Therapy’	30	107,700
Industry specialists	Human Services specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘CHC’	155	877,600
Industry specialists	Manufacturing, Print & Textiles specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘AUM’, ‘AUR’, ‘ICP’, ‘LMT07’, ‘MEA’, ‘MEM’, ‘MSA’, ‘MSA07’, ‘MSF’, ‘MSL’, ‘MSM’, ‘MSS’, ‘MST’, ‘PMA’, ‘PMB’, ‘PPM’ • program name does not include the substring ‘Automotive Sales’	40	190,300
Industry specialists	Mining, Resources & Energy specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘RII’, ‘UEG’, ‘UEP’, ‘UET’ • program name matches substring ‘Mining’ • program name does not include the substring ‘Civil’, ‘Traffic’	15	44,400
Industry specialists	Personal Services specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘SIT’, ‘SFL’, ‘SIF’	40	250,300
Industry specialists	Training & Education specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘TAE’	15	96,900

Partition (⫻)	Segment (⎔)	Rules	Number of RTOs[11]	Average enrolments per cluster per year[12]
Industry specialists	Wholesale, Retail, Transport & Logistics specialists	>80% of enrolments (2018-2020) in selected training packages excluding targeted programs, where: • program code matches substring ‘AVI’, ‘MAR’, SIR’, TLI’ • program name matches substring ‘Automotive Sales’	45	127,900

Cohort-specific clusters

Table 7: Detailed description of segments in the 'Cohort-specific' category

Partition (⫽)	Segment (⎔)	Rules	Number of RTOs[13]	Average enrolments per cluster per year[14]
Associations	Associations	RTO type is Association (93, 95)	135	618,600
Enterprise providers	Enterprise - government	RTO type is Enterprise (51)	60	275,200
Enterprise providers	Enterprise – non-government	RTO type is Enterprise (53)	65	233,500
Schools	School specialists	>90% of enrolments (2018-2020) are at school	30	371,300
Schools	Schools	RTO type is School (21, 25, 27)	375	1,020,500
Indigenous specialists	Indigenous specialists	>60% of enrolments (2018-2020) are Indigenous	25	34,400
International specialists	Multi-location international specialists	>90% of enrolments (2018-2020) have funding type 'international fee-for-service' >= 2 delivery locations (jurisdictions)	45	480,700
International specialists	Multi-program international specialists	90% of enrolments (2018-2020) have funding type 'international fee-for-service' <2 delivery locations (jurisdictions) >5.33 Programs	135	598,700

[13] Number of RTOs is rounded to the closest 5.
[14] Average enrolments per cluster per year is rounded to the closest 100.

Partition (⫽)	Segment (⎔)	Rules	Number of RTOs[13]	Average enrolments per cluster per year[14]
International specialists	Program-focused international specialists	90% of enrolments (2018-2020) have funding type ‘international fee-for-service’ <2 delivery locations (jurisdictions) <5.33 Programs	95	130,800
Small RTOs	Very small RTOs	2018-2020 average annual enrolments <25	295	21,700

Questions or feedback on the paper

JSA welcomes questions or feedback on this methodology paper for the RTO Typology.

We will use the feedback to inform future modifications to the RTO Typology, balancing the design considerations with what can be delivered within the constraints of time and budget.

Please send your feedback or any further questions to RTOTypology@jobsandskills.gov.au. Feedback closes AEDT 5 pm, Friday 29 June 2024.