*P:\PublicationComponents\logos\NCVER LOGOS\EPS - pagemaker_quark\ncver left tab_mono.eps*

Performance indicators in the VET sector

Tom Karmel  
Peter Fieger  
Davinia Blomberg  
Phil Loveder

National Centre for Vocational Education Research

*Discussion paper for the National Summit on Data for Quality Improvement in VET, April 2013*

FOR CLARITY, SOME PAGES WILL REQUIRE  
PRINTING IN COLOUR.

### NATIONAL CENTRE FOR VOCATIONAL EDUCATION RESEARCH

### **DISCUSSION PAPER**

The views and opinions expressed in this document are those of the authors  
and do not necessarily reflect the views of the Australian Government or   
state and territory governments.

**© National Centre for Vocational Education Research, 2013**

CC BY logo

With the exception of cover design, artwork, photographs, all logos, and any other material where copyright is owned by a third party, all material presented in this document is provided under a Creative Commons Attribution 3.0 Australia <creativecommons.org/licenses/by/3.0/au>.

This document should be attributed as Karmel, T, Fieger, P, Blomberg, D, Loveder, P 2013, *Performance indicators in the VET sector,* discussion paper for the National Summit on Data for Quality Improvement in VET, April 2013, NCVER, Adelaide*.*

The National Centre for Vocational Education Research (NCVER) is an independent body responsible for collecting, managing and analysing, evaluating and communicating research and statistics about vocational education and training (VET).

NCVER’s inhouse research and evaluation program undertakes projects which are strategic to the VET sector. These projects are developed and conducted by NCVER’s research staff and are funded by NCVER. This research aims to improve policy and practice in the VET sector.

TD/TNC 112.23

Published by NCVER, ABN 87 007 967 311

Level 11, 33 King William Street, Adelaide, SA 5000  
PO Box 8288 Station Arcade, Adelaide SA 5000, Australia

**P** +61 8 8230 8400 **F** +61 8 8212 3436 E [ncver@ncver.edu.au](mailto:ncver@ncver.edu.au) W <www.ncver.edu.au>

Contents

Tables and figures 4

Introduction 5

Indicators 7

Possible indicators for RTOs 9

Technical issues 12

The appropriate level of analysis 12

Face validity 13

Presentation of indicators 15

Final comment 19

References 33

# Tables and figures

## Tables

1 Student satisfaction with teaching and assessment (excerpt only) 17

2 Principal component analysis — rotated factor patterns 17

A1 Students by field of study for TAFE institutes, 2009 20

A2 Estimated population of graduates by field of education, 2009 26

## Figures

1 Modelled overall student satisfaction 14

2 Difference in modelled vs actual, overall student satisfaction 15

3 Proportion of RPL granted 16

# Introduction

Performance in the vocational education and training (VET) sector has largely been considered to date at the system level. Thus we see in the *Annual national report of the Australian vocational education and training system* (for example, DEEWR 2011) indicators covering:

* students’ participation and achievement in VET and training
* student achievements
* student outcomes
* employer engagement and satisfaction with VET
* VET system efficiency.

More recently, the National Agreement for Skills and Workforce Development specified two performance targets and seven indicators:

* halve the proportion of Australians nationally aged 20–64 without qualifications at certificate III level and above between 2009 and 2020
* double the number of higher level qualification completions (diploma and advanced diploma) nationally between 2009 and 2020
* Indicator 1 — Proportion of working age population with higher level qualifications (certificate III and above)
* Indicator 2 — Proportion of employers satisfied that training meets their needs
* Indicator 3 — Proportion of working age population with adequate foundation skills (literacy level 3 or above)
* Indicator 4 — Proportion of working age population with or working towards a non-school Australian Quality Framework (AQF) qualification
* Indicator 5 — Proportion of VET graduates with improved employment status after training
* Indicator 6 — Proportion of VET graduates with improved education/training status after training
* Indicator 7 — Proportion of Indigenous 20–64 year olds with or working towards post-school qualification in AQF Certificate III or above.

In recent years, an interest in indicators at the provider — registered training organisation (RTO) — level has emerged. This interest has come on a number of fronts. First, RTO level data has been seen as a valuable tool for regulators — and NCVER has done considerable work in this area for the Australian Skills Quality Agency. Second, training markets have become of increasing importance and one of the pre-requisites for effective markets is good information. Thus we have seen the creation of the My Skills website by the Commonwealth aimed at informing student choice. The third motivation for indicators comes from governments in the administration of their programs. RTO level information is seen as critical to accountability, and also there is thought to funding by outcomes (which of course implies RTO performance indicators).

In this paper, we set out our thinking on RTO performance indicators. We set out a taxonomy and then document possible indicators (noting that our current datasets have some areas well covered, but there are considerable gaps), based on a literature review of relevant national and international practice. In the third section, we discuss the issues surrounding performance indicators: the properties indicators should have, statistical and presentation issues. We illustrate some of the statistical issues with analysis of some indicators we have already calculated.

The paper ends with some final comments, drawing attention to the current work that NCVER is undertaking for senior officials.

At the outset, we need to note the scope of this work. We have already made the point that our interest is in RTO level indicators, not sector indicators. Thus we are not covering indicators that would go to questions on how well the VET sector is meeting the needs of the labour market.

# Indicators

There is no single way of categorising RTO indicators, and a review of practice elsewhere gives a variety of approaches. Some of the approaches to indicators have a stronger focus on system accountability and may not necessarily translate well to the RTO level. For example, the International Labour Organization (ILO), United Nations Educational, Scientific and Cultural Organization (UNESCO) and the European Training Foundation (ETF) (2012) have recently developed an indicator framework for TAFE-delivered vocational education and training (TVET) in Europe, with the categories being finance, access and participation, quality and innovation, and relevance to the labour market.

Another system level framework is the 3Es model — economy, efficiency and effectiveness — provided by the Report on Government Services (see Productivity Commission 2010). United Nations Development Program (UNDP) and Euromed (Homs 2007) are also concerned with system accountability and have established indicators around four key objectives of VET: participation (considered here as social partners and stakeholders participating in decision making); accountability (transparency and governance); decentralisation (autonomy in decision making and innovation of training system); and effectiveness and efficiency (system outcomes as they apply to labour market needs). The Organization for Economic Co-operation and Development (OECD) (2012), as part of its Indicators of National Education Systems (INES) program, focuses on four key education and training objectives: output of educational institutions and the impact on learners; financial and human resources investment in education and training; access, participation and progression; and the learning environment.

There are also numerous examples of frameworks which focus directly on RTO performance. We look at four of these: Phillips KPA (2006), the Skills Funding Agency (UK) in its Further Education (FE) Choices website, Office for Standards in Education, Children’s Services and Skills (OFSTED) (UK) indicators for its inspection of Further Education Colleges and the Illinois State Board of Higher Education (IBHE 2003).

Phillips KPA, in a report prepared for the Victorian Qualifications Authority, suggest three standards which could play a role in an outcomes-based audit model revolving around quality training and assessment; access and equity and maximising outcomes for clients; and management systems. Possible measures include:

* an index of learner engagement
* an index of learners’ and graduates’ perception of quality of teaching
* learners’ and graduates’ satisfaction of the VET experience
* self-assessment of learning outcomes
* student employment and further learning outcomes
* staff engagement with the education and training process
* employers’ satisfaction with the quality of training
* completion rates
* outcomes of review of assessment instruments and processes (this is not really an indicator).

In terms of the access and equity dimension, the suggestion is that many of the same indicators can be used but for specific groups.

OFSTED (UK) undertakes learning and inspection reports of further education colleges. They use the following broad indicators in their college assessments:

* outcomes for learners
* quality of teaching and learning and assessment
* effectiveness of leadership and management.

The Illinois State Board of Higher Education (IBHE 2003) has developed a performance framework around five key objectives:

* economic growth (employer/industry satisfaction with training, research expenditures)
* partnerships (with P-12 education)
* affordability (cost of tuition fees, income support etc.)
* access and diversity (levels of access by disability status, ethnicity and gender)
* quality (of teaching staff and course satisfaction).

The above three frameworks are from the point of view of central government agencies. By contrast the FE Choices website set up by the Skills Funding Agency (UK) presents indicators on:

* success rates (the percentage of people who achieved the qualification they started)
* learner destinations (the proportion of learners who progressed into or within further or higher education, found a job or improved their career prospects after completing their course)
* learning rate (the percentage of learners who went into higher education)
* employment rate (the percentage of learners who found work, got a better job or improved their prospects)
* learner satisfaction (how learners rated their training organisation)
* employer satisfaction (how employers rated the training for a particular training organisation).

To date we have looked at ‘official indicators’ recommended for or produced by government agencies. Common themes to emerge are indicators on the quality of the process, outcomes and equity. The privately produced *The* *Good Universities Guide* rates universities on similar dimensions but takes a relatively broad approach covering:

* characteristics: student demand, non-government earnings, research grants, research intensity
* access and equity: access by equity target groups; gender balance; Indigenous participation; entry flexibility; proportion given credit for technical and further education (TAFE) studies; proportion of school leavers
* who’s there: size; student characteristics (by age, international students, external students, non-English speaking background ([NESB])
* educational experience: student—staff ratio; staff qualifications; educational experience (satisfaction with teaching, generic skills rating, overall satisfaction), with these indicators also calculated for domestic students only
* graduate outcomes: starting salary; proportion getting a job; proportion getting a job or further study.

*The* *Good Universities Guide* uses stars rather than numeric values to rate the universities.

It is interesting to note that the higher education sector has a long history with indicators, beginning with the ‘dulux chart’ (Department of Employment, Education and Training 1994). The 1998 edition (Department of Education, Training and Youth Affairs 1998) had some 360 indicators (although this includes the same indicator for multiple years) covering:

* broad context: students, equivalent full-time students, type of enrolment, post-graduate students, overseas students, non-overseas Higher Education Contributors Scheme (HECS) liable and fee-paying students; basis for admission; median age; equity groups; field of study
* staff: number of staff; staff by function, by classification, by age, by qualifications; student-staff ratio; remuneration by employee
* finance: operating revenues and expenses; research income; salaries and related costs; expenses per equivalent full-time student unit (EFTSU); and assets
* outcomes: retention rate; student progress rate; graduate full-time employment; graduate full-time study; graduate starting salaries; course satisfaction (overall, good teaching, generic skills).

These indicators are presented as numerical values, although for the outcome indicators adjustments are made for the composition of the student body.

As one can see there is a very large number of possible indicators and various ways of classifying them. The classifications typically are quite descriptive or make use of concepts such as efficiency, equity, quality and outcomes. Based on a brief examination of possible frameworks, we have come up with the following taxonomy, taking a fairly pragmatic approach:

* provider characteristics: covering student participation and characteristics; training characteristics; amenities and services; and RTO management
* efficiency
* quality of teaching and learning
* consumer satisfaction
* labour market effectiveness.

We also note that the allocation of potential indicators to category is somewhat arbitrary. For example, the proportion of delivery online granted at first sight could be treated as a contextual indicator. On the other hand, it could be argued that it is directly relevant to the teaching and learning process (and certainly, a regulator may well wish to look carefully at providers who deliver a very high proportion of line delivery). Similarly, the qualification completion rate could be treated as either a teaching and learning indicator or as a measure of efficiency.

## Possible indicators for RTOs

We have made an initial attempt at compiling a list of RTO indicators. We have canvassed the various frameworks discussed earlier as well as coming up with some ourselves. It would be presumptuous to call the list exhaustive for the simple reason that there must be an infinity of possible indicators. Nevertheless this is our starting point, and the list has been compiled without thought of data availability.

### About the provider

#### Student characteristics

Number of students, distribution of students by age and sex, proportion of students who are Indigenous, proportion of students who have a disability, proportion of students who completed school, proportion of students who are international, proportion of students from a non-English speaking background, proportion of students who have a previous non-school qualification, proportion of students who completed Year 12.

#### Training characteristics

Distribution of student by field of education, distribution of students by qualification level, full-year training equivalents, number of states in which training is delivered, number of sites of delivery, number of qualifications registered to deliver, fee levels, proportion of income from fee-for-service activity.

#### Provider characteristics

Number of staff, number of staff by field of education, number of staff by age, length of operation.

#### Amenities and services

Distance to public transport, the number of car parking spaces, extent of financial assistance to students (including extent of campus employment), size of library, access to internet, level of pastoral care (student support services per student).

#### Registered training organisation management

Capital reserves, assets.

#### Efficiency

Module pass rate, qualification completion rate, proportion of recognition of prior learning (RPL) granted, time taken to complete a course, cost per publicly funded full year training equivalent (FYTE), share of cost to employers providing apprenticeships and other types of training, private spending by the student on a VET course, administrative and support costs per student or FYTE, salaries and salary related costs, turnover, operating expenses, operating revenues.

#### Quality of teaching and learning indicators

Student: teacher ratio, proportion of trainers with Certificate IV in Training and Assessment (TAE), proportion of trainers with degrees or diplomas in teaching/training, level of staff satisfaction and motivation levels, level of staff engagement in professional development, adequate facilities and equipment (measured by age of plant), number of complaints/black marks, innovation measure — share of information and communications technology (ICT) training activities, proportion of delivery sub-contracted, occupational health and safety incidences, transition paths from VET in schools — proportion of VET in schools students who continue in VET post-school, policies or descriptive effective practices on articulation with higher education, the proportion of students enrolled in higher education who receive credit for VET or who were admitted based on previous VET, the proportion of graduates enrolled in further study, proportion of VET by online delivery, proportion of delivery at the workplace, proportion of delivery in the classroom, proportion of graduates who report that training was relevant, extent of collaboration with industry, student attendance at institution, student participation in extra-curricular activities, extent of practices to improve program quality (for example, institution wide use of assessment results to improve program quality).

#### Consumer satisfaction

Overall satisfaction with the course, satisfaction of graduates with teacher quality, satisfaction with learning outcomes, whether a student achieved main goal, whether a student would recommend the institution, satisfaction of employers with training, satisfaction of graduates with teaching facilities, satisfaction of graduates with assessment quality.

#### Labour market effectiveness

Employment rate of graduates, employment rate of graduates of those not employed before training, level of match between course and job after training, proportion of graduates reporting their training was relevant to their job, salary of full-time workers after training, literacy rate.

# Technical issues

## The appropriate level of analysis

Registered training organisations, and especially TAFEs, are often large and multidisciplinary, multi-campus institutions. The idea of overall institute performance is thus problematic, as an aggregate level of analysis at the institute level may hide significant internal variance between disciplinary areas or campuses. Some areas within an RTO may have stronger systems and outcomes than other areas. Other areas within an RTO may cater for student groups that have been shown to exhibit poorer performance than the wider population.

These issues suggest that it might be better to calculate performance indicators at a field of study area, or even at a lower level of aggregation (for example, field of study by qualification level, or for specific groups of students). The problem with this is that the number of observations at a field of study level will be a lot smaller than at a whole of institution level. This means that the performance indicators will be more robust at a whole of institution level but potentially less informative (the standard errors on an estimate of a proportion reduce linearly with the square root of the number of observations).

Table A1 demonstrates the number of students for the 60 or so TAFEs to show the possibilities of calculating indicators by field of study for those indicators drawing on the students and courses collection.

Table A2 is a similar table showing the sample size from the Student Outcomes Surveys, based on a 'large survey' (the survey alternates between large and small samples with the former sufficient to produce institution level estimates).

In table A1 we see that there is a big range in the size of institutes, and within an institute there is wide variation in student numbers. In large institutes the numbers in some fields are in the thousands but in others they are in the hundreds.

Similar variation is seen in the Student Outcomes Survey sample sizes, but here the problem of small numbers becomes more pressing because the survey is based on a sample not a complete count. The variation in numbers across institutes and fields of study raises a strategic issue, that of statistical reliability. Any indicator will have underlying variability such that an indicator based on a small number of observations will be less reliable than one based on a large number. This type of variability occurs in sample surveys but it also occurs when there is no sampling variability — that is in a census. Indicators by definition are an average measure for the RTO and therefore their reliability will depend on how many observations contribute to it. The practical implication of this is that there needs to be some sort of cut-off for calculation. The precise cut-off will depend on the indicator. One way to overcome the issue of small numbers of observations is to aggregate RTOs together. For this to be meaningful we would need some set of defining characteristics as the basis for such an aggregation. The idea is that an indicator for the aggregated unit provides useful information in respect of the individual RTOs. Statistically, one technique to achieve this is ‘cluster analysis’ which groups units together on the basis of similarity in respect of a set of variables.

## Face validity

Indicators need to satisfy some basic requirements. First, they have to be able to discriminate; if there is very little variation between RTOs then the relevant indicator is of little value. Second, they need to have a metric that makes sense and has some intuitive interpretation. An example of an indicator that is easy to interpret is ‘percentage of students in employment’. More difficult to interpret are indicators based on arbitrary scales such as an average satisfaction score based on a Likert Scale (1 = very dissatisfied, 5 = very satisfied’. It is also possible to have binary indicators (for example 1 = has a refectory, 0 otherwise).

Ideally, indicators should be ordinal with a natural ordering. This is best illustrated with an indicator that does not have this characteristic: course completion rate. A very high completion rate may indicate high quality training, but it also could indicate low standards. Thus completion rate may be a very useful indicator for regulators who are looking for unusual behavior as a way of informing the RTOs they wish to audit. For governments distributing funds, however, it may be risky. For consumers it may provide useful information in conjunction with a range of other indicators.

A related issue is the extent to which an indicator is open to manipulation. An indicator can almost be manipulated by an RTO in the sense that the RTO may change behaviour in order to improve their apparent performance. Whether they do so or not will depend on the stakes. If governments are funding on the basis of an indicator then it is almost certain that the RTO will change their behavior in some way in order to increase their funding. An obvious example is completion rates. If this is part of a funding formula then an RTO may find it profitable to exclude students who are at risk of failing. Chen and Meinecke (2013) argue that this can be addressed through a provider ‘report card’ which has multiple indicators.

Another related issue relevant to validity is the extent to which an indicator is influenced by factors other than the underlying trait which the indicator is designed to capture. For example, the percentage of graduates in employment is trying to capture the extent to which the training at a provider is leading to a job. However, the underlying composition of the student body may well be the dominant factor behind apparently good or bad employment outcomes.

Landman and Hauserman (2003) point to other issues in addition to validity and reliability; specifically measurement bias (errors in the underlying data), lack of transparency (how the indicator is calculated), variance truncation (where the scale forces observations into groups), representativeness (when an indicator is based on a sample), information bias (in a sense the choice of indicators itself introduces a bias) and aggregation issues (the relationships in the data and resulting inferences change as the level of aggregation changes).

Above we have argued that some indicators can be affected by the composition of the student body. Whether this matters is an empirical question. Our analysis suggests that statistical adjustment matters and that without it indicators will be potentially very misleading.

The following example illustrates our approach. Essentially, we model the performance of individual RTOs in respect of an indicator. In this example the indicator is student satisfaction. An estimate is

made for each RTO that takes into account a series of contextual variables. In this example the contextual variables are:

* gender
* age
* Indigenous status
* disability status
* location (as defined by institute)
* employment status before training
* prior education
* reasons for study
* field of education
* AQF level
* group status (module completer/graduate).

Thus our analysis provides an estimate of overall student satisfaction for each RTO, taking into account the characteristics of its students.

Figure 1 illustrates the results for overall satisfaction, with the error bars (+/- two standard errors) giving an indication of statistical variability).

Figure 1 Modelled overall student satisfaction

The figure shows that there is variation in overall satisfaction across institutions, but that there is considerable statistical variability in the modelled estimates, as can be seen from the 95% confidence intervals in the figure. Nevertheless, in this example there are clearly some institutes which have better than average overall satisfaction and some with worse.

Figure 2 shows the importance of taking into account the contextual factors. It can be seen that the difference between the raw and modelled performance is very considerable for some RTOs, although overall there is a reasonably strong positive correlation between the raw and modelled data.

Figure 2 Difference in modelled vs actual, overall student satisfaction

## Presentation of indicators

Indicators naturally lead to discussion of league tables. We would argue that league tables are statistically invalid. The argument is that in a league table there is an implicit assumption that the difference between ranks is constant: the difference between the best RTO and the tenth RTO is the same as the difference between the tenth and the twentieth. However, figure 1 shows that this is usually not the case, with the bulk of RTOs in the middle of a distribution statically very similar.

Another example is the proportion of RPL, as seen in figure 3.

Figure 3 Proportion of RPL granted

In this example the distribution is quite skewed, with considerable numbers of RTOs undertaking very little RPL.

These examples suggest that a graphical presentation is a good way of showing relative performance, with error bars giving a reasonable indication of what constitutes a significant difference (statistically speaking).

Inevitably, however, there will be demand to present the range of indicators for an individual RTO. One way forward here might be to use some sort of traffic light or starring system, as used in *The Good Universities Guide*. For example, we could signify ‘green’ to represent a positive difference which is statistically different from the average, ‘amber’ to represent performance not statistically different from the average, and ‘red’ to represent performance statistically worse than the average.

This sort of colour scheme does not work so well for indicators such as percentage of RPL, because of the skewed nature of the distribution. In such cases, stars might work better, with one star indicating modal behaviour (that is very little RPL), two stars indicating significant RPL and three stars indicating abnormally high RPL.

Table 1 gives an indication of such a presentation, although one could not see standard errors and statistics being presented in a document aimed at consumers (and probably not regulators nor governments for that matter).

Table 1 Student satisfaction with teaching and assessment (excerpt only)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Institute | All students teaching satisfaction | | | | All students assessment satisfaction | | | |
|  | Estimate | StdErr | t | P>t | Estimate | StdErr | t | P>t |
| 1 | 0.027 | 0.018 | 1.51 | 0.132 | 0.033 | 0.019 | 1.77 | 0.077 |
| 2 | 0.049 | 0.022 | 2.21 | 0.027 | 0.020 | 0.023 | 0.85 | 0.398 |
| 3 | 0.062 | 0.027 | 2.29 | 0.022 | 0.060 | 0.028 | 2.14 | 0.032 |
| 4 | 0.018 | 0.020 | 0.88 | 0.377 | 0.034 | 0.021 | 1.61 | 0.107 |
| 5 | -0.048 | 0.020 | -2.45 | 0.014 | -0.056 | 0.021 | -2.74 | 0.006 |
| 6 | -0.140 | 0.025 | -5.62 | <.0001 | 0.065 | 0.025 | 2.56 | 0.010 |
| 7 | 0.015 | 0.025 | 0.59 | 0.555 | -0.015 | 0.026 | -0.56 | 0.574 |
| 8 | -0.055 | 0.017 | -3.21 | 0.001 | -0.058 | 0.018 | -3.22 | 0.001 |
| 10 | -0.076 | 0.016 | -4.83 | <.0001 | -0.082 | 0.017 | -4.95 | <.0001 |
| 11 | 0.057 | 0.022 | 2.53 | 0.012 | 0.046 | 0.024 | 1.95 | 0.051 |
| 12 | -0.062 | 0.018 | -3.39 | 0.001 | -0.046 | 0.019 | -2.37 | 0.018 |
| 13 | -0.038 | 0.016 | -2.35 | 0.019 | -0.028 | 0.017 | -1.65 | 0.098 |
| 14 | 0.001 | 0.025 | 0.05 | 0.961 | -0.030 | 0.026 | -1.16 | 0.248 |
| 15 | -0.093 | 0.020 | -4.57 | <.0001 | -0.078 | 0.021 | -3.7 | 0.000 |

A further presentation challenge is keeping the whole exercise manageable. It does not take too much imagination to come up with a huge raft of indicators, such that the sheer magnitude is hard to present let alone absorb. Another question is whether we should present indicators at the whole of institution level or for particular qualifications. The whole of institution approach keeps the exercise more manageable, but may be less useful to the consumers of the indicators. One compromise would be to restrict individual qualification indicators to those qualifications where there are large numbers of students, and present these as well as whole of institution indicators.

Another possibility is to identify indicators that are closely related, with a view to discarding some of them (because they provide little extra information) or combining them. To illustrate this point we analysed the behaviour of a number of indicators relating to student satisfaction and student outcomes and undertook a principal components analysis, the intention of which is to isolate a small number of underlying factors.

Table 2 Principal component analysis — rotated factor patterns

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
| Employed after training | 0.080 | 0.077 | 0.950 | 0.114 |
| Salary after training | 0.106 | 0.116 | 0.137 | 0.953 |
| Teaching satisfaction | 0.884 | 0.030 | 0.239 | 0.111 |
| Assessment satisfaction | 0.817 | 0.279 | 0.071 | 0.278 |
| Learning satisfaction | 0.719 | 0.112 | -0.270 | -0.293 |
| Overall satisfaction | 0.854 | 0.413 | 0.104 | 0.115 |
| Training goal achieved | 0.060 | 0.659 | 0.571 | 0.153 |
| Recommend institution | 0.362 | 0.850 | 0.007 | 0.063 |

In this example, we find that there is one factor relating to student satisfaction that is separate to three other factors. From this analysis it seems that we can replace eight indicators with four summary indicators. One issue is whether it is possible to present factor scores in a meaningful way, given the underlying sophistication of the analysis. The fact that factor scores are distributed normally provides one possibility: ‘amber’ for +/- one standard deviation, ‘green’ for greater than one standard deviation and ‘red’ for less than one standard deviation below average.

# Final comment

NCVER has already undertaken considerable work on RTO level indicators, primarily for the national VET regulator, the Australian Skills Quality Agency. This work is aimed at assisting the regulator with its risk profiling. It is an obvious application of RTO indicators but one that is not that challenging for the simple reason that it identifies unusual performance rather than good or bad performance. The RTO indicators calculated for this purpose have remained confidential to the regulators and have not been published — the only RTO data to be published by NCVER is a set of descriptive statistics detailing and tabulating the number of students by various characteristics (NCVER 2012).

However, this is all about to change. The Commonwealth has launched the My Skills website with the clear intention of including performance indicators to assist consumer choice. This is consistent with the ‘transparency agenda’ (Commonwealth of Australia 2012) which puts considerable emphasis on the publication of information to aid transparency. The VET sector is lagging behind the higher education sector, in which university level indicators have been published since the early 1990s and the schools sector which has seen the publication of schools level data on the My School website. The VET sector is catching up.

NCVER is in the process of building on the work done for the national regulator. The extension of the work is on two fronts. The first is to address the needs of consumers and governments as well as regulators. This ‘ups the ante’ because consumers and governments are concerned with *good* performance not just *different* performance. The second front is the range of indicators. The work done for the regulator was restricted to available data, notably the students and courses administrative collection and the Student Outcomes Survey. The current work, being undertaken for senior officials, will canvass the broadest range of indicators irrespective of whether data are available or not.

Having compiled a list of possible indicators, the task is then to assess them in terms of ‘fitness for purpose (including reliability and validity)’ against the broad three purposes — for regulation, consumer information and government funding/accountability — and the cost of collection. The latter covers both the cost to governments and to RTOs and needs to consider response burden as well as direct dollar costs. Once NCVER has completed this work it will be considered by senior officials with a view to implementing a road map. The road map will outline the steps that will need to be taken to implement the indicators, from data collection to analysis. Keeping the costs and benefits in balance will be important, and one would anticipate that the final set of performance indicators will need to be relatively few in number to keep the whole exercise manageable.

Table A1 Students by field of study for TAFE institutes, 2009

| Institute name | Natural & physical sciences | Informa-tion tech-nology | Engineering & related tech-nologies | Architecture & building | Agriculture, environmental & related studies | Health | Education | Management & commerce | Society & culture | Creative arts | Food, hospitality & personal services | Mixed field programs | Total |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BARRIER REEF INSTITUTE OF TAFE | 32 | 175 | 3,130 | 1,151 | 467 | 781 | 549 | 3,221 | 1,779 | 373 | 2,211 | 8,757 | 22,626 |
| BATCHELOR INSTITUTE OF INDIGENOUS TERTIARY EDUCATION | 0 | 0 | 0 | 351 | 145 | 219 | 338 | 100 | 477 | 340 | 0 | 314 | 2,284 |
| BENDIGO REGIONAL INSTITUTE OF TAFE | 197 | 136 | 2,558 | 1,961 | 1,185 | 1,065 | 375 | 3,129 | 949 | 649 | 2,175 | 1,777 | 16,156 |
| BOX HILL INSTITUTE OF TAFE & BOX HILL INSTITUTE | 132 | 1,337 | 6,493 | 1,901 | 147 | 1,492 | 1,410 | 5,378 | 2,493 | 1,565 | 1,958 | 3,233 | 27,539 |
| BRISBANE NORTH INSTITUTE OF TAFE | 0 | 1,083 | 1,694 | 265 | 2,049 | 8,794 | 1,828 | 11,957 | 4,560 | 1,026 | 3,039 | 12,172 | 48,467 |
| CANBERRA INSTITUTE OF TECHNOLOGY | 413 | 1,546 | 2,963 | 3,127 | 1,350 | 1,079 | 592 | 6,306 | 5,042 | 1,560 | 2,296 | 3,789 | 30,063 |
| CENTRAL GIPPSLAND INSTITUTE OF TAFE | 0 | 159 | 6,266 | 1,649 | 259 | 1,263 | 899 | 1,851 | 960 | 380 | 1,805 | 1,143 | 16,634 |
| CENTRAL INSTITUTE OF TECHNOLOGY | 558 | 639 | 3,477 | 2,266 | 124 | 1,364 | 3,089 | 6,485 | 5,731 | 3,886 | 432 | 8,122 | 36,173 |
| CENTRAL QUEENSLAND INSTITUTE OF TAFE | 123 | 101 | 12,052 | 1,274 | 299 | 401 | 471 | 4,251 | 2,763 | 670 | 3,613 | 2,832 | 28,850 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CHALLENGER INSTITUTE OF TECHNOLOGY | 422 | 636 | 5,831 | 1,899 | 2,364 | 568 | 3,437 | 3,187 | 1,502 | 437 | 2,667 | 2,329 | 25,279 |
| CHARLES DARWIN UNIVERSITY | 10 | 171 | 2,643 | 685 | 2,867 | 143 | 1,773 | 2,437 | 1,452 | 880 | 2,588 | 1,247 | 16,896 |
| CHISHOLM INSTITUTE | 184 | 1,849 | 12,755 | 4,664 | 935 | 3,390 | 1,246 | 8,897 | 4,443 | 926 | 5,069 | 6,785 | 51,143 |
| C.Y. O'CONNOR COLLEGE OF TAFE | 0 | 28 | 859 | 135 | 1,076 | 271 | 609 | 1,457 | 833 | 239 | 156 | 488 | 6,151 |
| DURACK INSTITUTE OF TECHNOLOGY | 76 | 74 | 1,535 | 198 | 474 | 395 | 599 | 1,150 | 356 | 375 | 791 | 405 | 6,428 |
| EAST GIPPSLAND INSTITUTE OF TAFE | 0 | 147 | 2,291 | 1,603 | 2,005 | 1,277 | 484 | 2,327 | 1,014 | 166 | 3,182 | 1,706 | 16,202 |
| GOLD COAST INSTITUTE OF TAFE | 0 | 261 | 2,914 | 1,405 | 217 | 914 | 753 | 3,636 | 1,072 | 758 | 1,747 | 11,305 | 24,982 |
| GORDON INSTITUTE OF TAFE | 99 | 415 | 3,089 | 3,248 | 542 | 1,557 | 564 | 4,697 | 1,357 | 750 | 2,844 | 2,703 | 21,865 |
| GOULBURN OVENS INSTITUTE OF TAFE | 46 | 49 | 3,361 | 1,487 | 3,001 | 1,407 | 443 | 1,163 | 1,142 | 288 | 1,985 | 1,720 | 16,092 |
| GREAT SOUTHERN TAFE | 0 | 128 | 1,075 | 253 | 1,062 | 628 | 979 | 1,035 | 469 | 477 | 361 | 836 | 7,303 |
| HOLMESGLEN INSTITUTE OF TAFE | 244 | 950 | 6,987 | 8,398 | 1,178 | 3,125 | 1,356 | 10,756 | 3,605 | 1,000 | 3,493 | 10,374 | 51,466 |
| KANGAN INSTITUTE | 85 | 713 | 12,096 | 1,776 | 755 | 1,465 | 910 | 7,480 | 2,149 | 1,287 | 4,390 | 4,771 | 37,877 |
| KIMBERLEY TAFE | 0 | 56 | 479 | 179 | 728 | 168 | 1,147 | 601 | 398 | 336 | 439 | 251 | 4,782 |
| METROPOLITAN SOUTH INSTITUTE OF TAFE | 45 | 517 | 2,151 | 0 | 611 | 1,231 | 1,789 | 5,846 | 4,655 | 1,432 | 2,893 | 9,725 | 30,895 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MINISTER FOR EMPLOYMENT, TRAINING AND FURTHER EDUCATION | 264 | 1,590 | 8,571 | 5,809 | 2,026 | 3,497 | 2,982 | 15,759 | 9,959 | 2,212 | 4,712 | 12,743 | 70,124 |
| MOUNT ISA INSTITUTE OF TAFE | 0 | 0 | 774 | 345 | 78 | 135 | 114 | 362 | 322 | 0 | 199 | 859 | 3,188 |
| NORTHERN MELBOURNE INSTITUTE OF TAFE | 141 | 1,056 | 6,815 | 5,925 | 2,500 | 768 | 1,348 | 4,402 | 2,609 | 2,020 | 2,738 | 5,927 | 36,249 |
| PILBARA TAFE | 0 | 45 | 3,481 | 197 | 170 | 593 | 807 | 977 | 420 | 98 | 302 | 533 | 7,623 |
| POLYTECHNIC WEST | 127 | 796 | 11,080 | 4,138 | 676 | 1,748 | 2,996 | 3,010 | 2,646 | 516 | 2,632 | 9,239 | 39,604 |
| RMIT UNIVERSITY | 330 | 556 | 4,740 | 1,796 | 61 | 2,338 | 466 | 5,494 | 1,532 | 2,241 | 0 | 2,048 | 21,602 |
| SKILLSTECH AUSTRALIA | 0 | 0 | 18,341 | 7,767 | 286 | 601 | 15 | 201 | 0 | 0 | 0 | 2,091 | 29,302 |
| SOUTH WEST INSTITUTE OF TAFE | 120 | 153 | 2,745 | 1,338 | 1,514 | 3,172 | 381 | 1,897 | 768 | 614 | 2,653 | 965 | 16,320 |
| SOUTH WEST REGIONAL COLLEGE OF TAFE | 104 | 194 | 1,871 | 738 | 1,145 | 391 | 437 | 1,540 | 671 | 368 | 506 | 1,020 | 8,985 |
| SOUTHBANK INSTITUTE OF TECHNOLOGY | 424 | 695 | 2,251 | 812 | 0 | 3,179 | 944 | 5,553 | 4,091 | 1,624 | 7,279 | 14,776 | 41,628 |
| SOUTHERN QUEENSLAND INSTITUTE OF TAFE | 0 | 324 | 5,141 | 1,175 | 1,777 | 1,254 | 944 | 3,434 | 1,981 | 618 | 4,405 | 4,790 | 25,843 |
| SUNRAYSIA INSTITUTE OF TAFE | 19 | 69 | 1,244 | 572 | 979 | 299 | 345 | 952 | 339 | 164 | 1,924 | 835 | 7,741 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SUNSHINE COAST INSTITUTE OF TAFE | 37 | 235 | 2,333 | 1,713 | 563 | 1,661 | 552 | 2,528 | 3,155 | 816 | 2,079 | 2,546 | 18,218 |
| SWINBURNE UNIVERSITY OF TECHNOLOGY | 212 | 1,416 | 4,540 | 1,927 | 1,632 | 7,418 | 739 | 11,778 | 5,449 | 799 | 704 | 5,491 | 42,105 |
| TAFE NSW — HUNTER INSTITUTE | 329 | 1,107 | 13,157 | 4,119 | 3,291 | 3,887 | 1,048 | 7,820 | 3,905 | 1,813 | 4,634 | 12,675 | 57,785 |
| TAFE NSW — ILLAWARRA INSTITUTE | 30 | 750 | 5,218 | 2,519 | 1,442 | 1,206 | 628 | 4,784 | 3,010 | 1,248 | 4,681 | 7,687 | 33,203 |
| TAFE NSW — NEW ENGLAND INSTITUTE | 41 | 775 | 3,130 | 2,062 | 1,276 | 1,710 | 361 | 2,496 | 1,902 | 933 | 1,446 | 4,868 | 21,000 |
| TAFE NSW — NORTH COAST INSTITUTE | 58 | 2,561 | 4,284 | 2,408 | 2,672 | 1,232 | 1,513 | 7,944 | 3,900 | 1,085 | 3,472 | 11,232 | 42,361 |
| TAFE NSW — NORTHERN SYDNEY INSTITUTE | 123 | 1,961 | 3,493 | 3,661 | 2,691 | 1,394 | 846 | 8,871 | 5,280 | 2,477 | 3,877 | 12,729 | 47,403 |
| TAFE NSW — OPEN TRAINING & EDUCATION NETWORK | 71 | 533 | 1,358 | 1,377 | 704 | 2,754 | 764 | 18,289 | 6,823 | 185 | 1,617 | 6,941 | 41,416 |
| TAFE NSW — RIVERINA INSTITUTE | 47 | 747 | 5,691 | 2,488 | 3,430 | 2,116 | 705 | 3,754 | 2,718 | 357 | 3,616 | 7,849 | 33,518 |
| TAFE NSW — SOUTH WESTERN SYDNEY INSTITUTE | 655 | 2,067 | 12,423 | 8,106 | 1,072 | 1,991 | 1,004 | 13,208 | 8,735 | 1,235 | 3,899 | 18,444 | 72,839 |
| TAFE NSW — SYDNEY INSTITUTE | 407 | 2,174 | 10,028 | 5,573 | 0 | 2,844 | 881 | 14,292 | 11,452 | 4,240 | 4,723 | 17,552 | 74,166 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TAFE NSW — WESTERN INSTITUTE | 27 | 737 | 5,339 | 2,036 | 4,171 | 2,866 | 723 | 4,904 | 3,116 | 1,014 | 5,777 | 7,633 | 38,343 |
| TAFE NSW — WESTERN SYDNEY INSTITUTE | 0 | 2,707 | 5,776 | 3,368 | 1,817 | 2,325 | 678 | 9,007 | 5,156 | 1,606 | 3,415 | 12,652 | 48,507 |
| TAFE SA — ADELAIDE NORTH INSTITUTE | 0 | 277 | 447 | 157 | 14 | 256 | 0 | 1,772 | 111 | 28 | 200 | 1,253 | 4,515 |
| TAFE SA — ADELAIDE SOUTH INSTITUTE | 0 | 14 | 215 | 92 | 0 | 16 | 0 | 881 | 39 | 113 | 39 | 250 | 1,659 |
| TAFE SA — REGIONAL | 0 | 5 | 100 | 82 | 372 | 66 | 0 | 644 | 0 | 0 | 306 | 665 | 2,240 |
| TASMANIAN POLYTECHNIC | 106 | 798 | 1,496 | 1,047 | 483 | 614 | 156 | 4,352 | 2,517 | 862 | 1,978 | 4,413 | 18,822 |
| TASMANIAN SKILLS INSTITUTE | 20 | 155 | 7,283 | 4,491 | 2,056 | 1,657 | 415 | 1,788 | 1,109 | 0 | 5,770 | 196 | 24,940 |
| THE BREMER INSTITUTE OF TAFE | 0 | 140 | 3,067 | 915 | 361 | 1,069 | 1,057 | 2,462 | 3,868 | 430 | 1,528 | 5,687 | 20,584 |
| TROPICAL NORTH QUEENSLAND INSTITUTE OF TAFE | 0 | 155 | 4,340 | 1,534 | 936 | 1,893 | 460 | 2,440 | 2,169 | 703 | 2,114 | 5,111 | 21,855 |
| UNIVERSITY OF BALLARAT | 9 | 182 | 3,372 | 1,466 | 1,010 | 1,518 | 369 | 2,710 | 1,663 | 438 | 1,135 | 1,864 | 15,736 |
| VICTORIA UNIVERSITY | 121 | 862 | 4,282 | 3,744 | 40 | 1,147 | 1,672 | 5,653 | 3,737 | 864 | 2,638 | 5,254 | 30,014 |
| WEST COAST INSTITUTE OF TRAINING | 0 | 462 | 182 | 185 | 334 | 1,335 | 2,907 | 2,387 | 1,363 | 60 | 1,416 | 744 | 11,375 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| WIDE BAY INSTITUTE OF TAFE | 0 | 186 | 2,215 | 589 | 1,012 | 244 | 534 | 2,961 | 2,969 | 305 | 1,757 | 2,852 | 15,624 |
| WILLIAM ANGLISS INSTITUTE OF TAFE | 0 | 0 | 643 | 0 | 0 | 0 | 62 | 5,506 | 0 | 42 | 13,799 | 3,698 | 23,750 |
| WODONGA INSTITUTE OF TAFE | 13 | 187 | 6,045 | 1,046 | 1,029 | 1,199 | 407 | 2,388 | 1,059 | 452 | 1,658 | 1,649 | 17,132 |
| **TOTAL TAFE** | **6,501** | **37,841** | **274,210** | **127,192** | **67,460** | **95,390** | **55,900** | **286,547** | **159,744** | **52,380** | **155,762** | **314,545** | **1,633,472** |
| OTHER GOVERNMENT PROVIDERS | 2 | 696 | 4,701 | 6,886 | 5,694 | 291 | 352 | 15,126 | 1,319 | 3,689 | 18,742 | 837 | 58,335 |
| COMMUNITY EDUCATION PROVIDERS | 0 | 1,125 | 1,880 | 2,331 | 3,490 | 6,706 | 5,458 | 17,836 | 16,171 | 1,302 | 13,496 | 23,238 | 93,033 |
| OTHER REGISTERED PROVIDERS | 908 | 2,095 | 54,425 | 15,266 | 10,434 | 7,642 | 7,230 | 78,946 | 32,058 | 1,954 | 32,807 | 16,114 | 259,879 |
| **TOTAL** | **7,411** | **41,757** | **335,216** | **151,675** | **87,078** | **110,029** | **68,940** | **398,455** | **209,292** | **59,325** | **220,807** | **354,734** | **2,044,719** |

Table A2 Estimated population of graduates by field of education, 2009

|  | Field of education | | | | | | | | | | | | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| State | Institute name | Natural & physical science | Inform-ation tech-nology | Engineering & related technologies | Architecture & building | Agricul-ture, environ-mental & related studies | Health | Education | Management  & commerce | Society & culture | Crea-tive arts | Food, hospitality & personal services | Mixed field programs | Total |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **New South Wales** | TAFE NSW —HUNTER INSTITUTE | 7 | 22 | 173 | 39 | 23 | 41 | 25 | 254 | 116 | 55 | 66 | 97 | 918 |
|  | TAFE NSW — ILLAWARRA INSTITUTE | 0 | 11 | 100 | 43 | 21 | 29 | 25 | 152 | 115 | 27 | 42 | 61 | 626 |
|  | TAFE NSW — NEW ENGLAND INSTITUTE | 1 | 5 | 73 | 14 | 23 | 42 | 8 | 67 | 68 | 14 | 12 | 25 | 352 |
|  | TAFE NSW — NORTH COAST INSTITUTE | 6 | 41 | 79 | 27 | 43 | 36 | 22 | 226 | 100 | 30 | 33 | 56 | 699 |
|  | TAFE NSW — NORTHERN SYDNEY INSTITUTE | 0 | 36 | 56 | 57 | 80 | 70 | 11 | 228 | 159 | 60 | 57 | 68 | 882 |
|  | TAFE NSW — OPEN TRAINING & EDUCATION NETWORK | 0 | 11 | 29 | 14 | 8 | 72 | 2 | 246 | 68 | 1 | 1 | 31 | 483 |
|  | TAFE NSW — RIVERINA INSTITUTE | 1 | 19 | 59 | 37 | 47 | 25 | 27 | 104 | 74 | 11 | 23 | 48 | 475 |
|  | TAFE NSW —SOUTH WESTERN SYDNEY INSTITUTE | 29 | 60 | 259 | 105 | 25 | 53 | 24 | 516 | 244 | 22 | 86 | 126 | 1,549 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TAFE NSW —SYDNEY INSTITUTE | 5 | 55 | 165 | 93 | 0 | 87 | 32 | 356 | 336 | 103 | 90 | 102 | 1,424 |
|  | TAFE NSW — WESTERN INSTITUTE | 1 | 3 | 78 | 21 | 43 | 54 | 12 | 135 | 68 | 11 | 29 | 37 | 492 |
|  | TAFE NSW — WESTERN SYDNEY INSTITUTE | 0 | 42 | 91 | 33 | 25 | 29 | 16 | 260 | 124 | 29 | 46 | 65 | 760 |
| **Victoria** | CHISHOLM INSTITUTE OF TAFE | 11 | 14 | 156 | 82 | 21 | 92 | 98 | 219 | 124 | 25 | 113 | 58 | 1,013 |
|  | BENDIGO REGIONAL INSTITUTE OF TAFE | 1 | 11 | 91 | 35 | 27 | 18 | 40 | 109 | 73 | 16 | 34 | 10 | 465 |
|  | BOX HILL INSTITUTE OF TAFE | 5 | 12 | 127 | 29 | 10 | 64 | 95 | 256 | 64 | 32 | 69 | 25 | 788 |
|  | CENTRAL GIPPSLAND INSTITUTE OF TAFE | 0 | 11 | 97 | 32 | 7 | 37 | 90 | 100 | 64 | 3 | 129 | 13 | 583 |
|  | EAST GIPPSLAND INSTITUTE OF TAFE | 0 | 4 | 69 | 12 | 69 | 12 | 28 | 111 | 56 | 4 | 78 | 4 | 447 |
|  | GORDON INSTITUTE OF TAFE | 1 | 11 | 102 | 42 | 32 | 34 | 34 | 162 | 49 | 16 | 83 | 20 | 586 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | GOULBURN OVENS INSTITUTE OF TAFE | 4 | 9 | 123 | 22 | 129 | 43 | 50 | 65 | 79 | 12 | 105 | 12 | 653 |
|  | HOLMESGLEN INSTITUTE OF TAFE | 14 | 16 | 72 | 93 | 24 | 28 | 61 | 219 | 147 | 35 | 87 | 93 | 889 |
|  | KANGAN BATMAN INSTITUTE OF TAFE | 6 | 64 | 180 | 24 | 8 | 38 | 32 | 228 | 70 | 15 | 58 | 36 | 759 |
|  | NORTHERN MELBOURNE INSTITUTE OF TAFE | 11 | 18 | 129 | 56 | 81 | 29 | 83 | 169 | 72 | 39 | 60 | 58 | 805 |
|  | ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY (TAFE DIVISION) | 14 | 40 | 145 | 43 | 3 | 81 | 21 | 176 | 48 | 69 | 0 | 47 | 687 |
|  | SOUTH WEST INSTITUTE OF TAFE | 9 | 12 | 66 | 36 | 79 | 25 | 17 | 59 | 52 | 18 | 64 | 6 | 443 |
|  | SUNRAYSIA INSTITUTE OF TAFE | 3 | 7 | 84 | 13 | 69 | 26 | 58 | 71 | 52 | 1 | 50 | 42 | 476 |
|  | SWINBURNE UNIVERSITY OF TECHNOLOGY (TAFE DIVISION) | 5 | 20 | 87 | 32 | 22 | 83 | 40 | 401 | 142 | 21 | 43 | 49 | 945 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | UNIVERSITY OF BALLARAT (TAFE DIVISION) | 0 | 11 | 109 | 30 | 34 | 59 | 13 | 180 | 81 | 14 | 50 | 18 | 599 |
|  | VICTORIA UNIVERSITY (TAFE DIVISION) | 11 | 36 | 96 | 42 | 0 | 77 | 89 | 203 | 127 | 26 | 104 | 35 | 846 |
|  | WILLIAM ANGLISS INSTITUTE OF TAFE | 0 | 0 | 23 | 0 | 0 | 0 | 2 | 196 | 0 | 0 | 177 | 0 | 398 |
|  | WODONGA INSTITUTE OF TAFE | 2 | 8 | 137 | 8 | 27 | 44 | 45 | 156 | 64 | 8 | 57 | 32 | 588 |
|  | DRIVER EDUCATION CENTRE OF AUSTRALIA PTY LTD | 0 | 0 | 13 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 15 |
| **Queensland** | BARRIER REEF INSTITUTE OF TAFE | 2 | 5 | 133 | 39 | 16 | 8 | 54 | 143 | 78 | 11 | 164 | 14 | 667 |
|  | THE BREMER INSTITUTE OF TAFE | 0 | 3 | 60 | 11 | 14 | 34 | 104 | 183 | 97 | 13 | 124 | 24 | 667 |
|  | BRISBANE NORTH INSTITUTE OF TAFE | 0 | 25 | 60 | 9 | 95 | 52 | 84 | 326 | 575 | 38 | 117 | 29 | 1,410 |
|  | CENTRAL QUEENSLAND INSTITUTE OF TAFE | 7 | 1 | 292 | 27 | 14 | 12 | 30 | 138 | 95 | 15 | 181 | 20 | 832 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | COOLOOLA SUNSHINE INSTITUTE OF TAFE | 3 | 12 | 155 | 57 | 26 | 60 | 41 | 209 | 147 | 37 | 137 | 13 | 897 |
|  | GOLD COAST INSTITUTE OF TAFE | 0 | 26 | 105 | 40 | 4 | 57 | 51 | 187 | 62 | 16 | 109 | 36 | 693 |
|  | METROPOLITAN SOUTH INSTITUTE OF TAFE | 5 | 15 | 47 | 0 | 21 | 57 | 121 | 290 | 134 | 33 | 146 | 57 | 926 |
|  | MOUNT ISA INSTITUTE OF TAFE | 0 | 0 | 47 | 7 | 1 | 0 | 31 | 42 | 19 | 0 | 18 | 3 | 168 |
|  | SOUTHBANK INSTITUTE OF TAFE | 23 | 36 | 69 | 13 | 0 | 77 | 55 | 120 | 56 | 57 | 295 | 68 | 869 |
|  | SOUTHERN QUEENSLAND INSTITUTE OF TAFE | 0 | 16 | 183 | 24 | 99 | 34 | 49 | 185 | 84 | 33 | 307 | 17 | 1,031 |
|  | TROPICAL NORTH QUEENSLAND INSTITUTE OF TAFE | 0 | 15 | 159 | 16 | 32 | 83 | 53 | 130 | 102 | 10 | 93 | 12 | 705 |
|  | WIDE BAY INSTITUTE OF TAFE | 0 | 7 | 91 | 18 | 32 | 2 | 37 | 210 | 133 | 13 | 116 | 9 | 668 |
|  | SKILLSTECH AUSTRALIA | 0 | 0 | 498 | 183 | 13 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 700 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Western Australia** | SWAN TAFE | 8 | 29 | 406 | 125 | 22 | 83 | 85 | 154 | 78 | 6 | 99 | 118 | 1,213 |
|  | WEST COAST TAFE | 0 | 9 | 10 | 2 | 17 | 76 | 66 | 143 | 109 | 6 | 92 | 15 | 545 |
|  | CHALLENGER TAFE | 18 | 21 | 266 | 53 | 77 | 26 | 122 | 181 | 87 | 19 | 105 | 29 | 1,004 |
|  | CENTRAL TAFE | 16 | 16 | 100 | 49 | 6 | 54 | 77 | 323 | 220 | 145 | 13 | 215 | 1,234 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | CENTRAL WEST TAFE | 3 | 1 | 139 | 10 | 68 | 14 | 22 | 120 | 30 | 17 | 43 | 10 | 477 |
|  | GREAT SOUTHERN TAFE | 0 | 15 | 50 | 17 | 89 | 18 | 26 | 119 | 71 | 24 | 58 | 30 | 517 |
|  | SOUTH WEST REGIONAL COLLEGE OF TAFE | 8 | 18 | 131 | 59 | 94 | 37 | 59 | 137 | 50 | 14 | 55 | 20 | 682 |
|  | KIMBERLEY COLLEGE OF TAFE | 0 | 1 | 36 | 0 | 31 | 2 | 27 | 31 | 28 | 13 | 55 | 6 | 230 |
|  | C.Y. O’CONNOR COLLEGE OF TAFE | 0 | 1 | 70 | 5 | 79 | 22 | 35 | 82 | 91 | 5 | 16 | 40 | 446 |
|  | PILBARA TAFE | 0 | 3 | 242 | 4 | 3 | 13 | 32 | 97 | 31 | 6 | 28 | 15 | 474 |
|  | CURTIN UNIVERSITY - VTEC | 0 | 1 | 56 | 12 | 59 | 19 | 36 | 78 | 30 | 0 | 9 | 13 | 313 |
|  | EDITH COWAN UNIVERSITY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 0 | 76 |
| **South Australia** | TAFE SA REGIONAL | 2 | 6 | 54 | 14 | 90 | 68 | 132 | 267 | 241 | 14 | 25 | 94 | 1,007 |
|  | TAFE SA ADELAIDE SOUTH | 5 | 16 | 112 | 75 | 0 | 22 | 52 | 327 | 204 | 18 | 52 | 97 | 980 |
|  | TAFE SA ADELAIDE NORTH | 7 | 12 | 127 | 62 | 9 | 133 | 161 | 171 | 192 | 36 | 107 | 112 | 1,129 |
| **Tasmania** | INSTITUTE OF TAFE TASMANIA | 6 | 30 | 242 | 95 | 115 | 40 | 59 | 261 | 161 | 42 | 294 | 48 | 1,393 |
| **Northern Territory** | BATCHELOR INSTITUTE OF INDIGENOUS TERTIARY EDUCATION | 0 | 0 | 1 | 1 | 1 | 6 | 7 | 3 | 6 | 9 | 0 | 0 | 34 |
|  | CHARLES DARWIN UNIVERSITY | 2 | 28 | 164 | 26 | 120 | 26 | 112 | 295 | 138 | 21 | 148 | 45 | 1,125 |
| **Australian Capital Territory** | CANBERRA INSTITUTE OF TECHNOLOGY | 15 | 35 | 67 | 41 | 21 | 51 | 83 | 257 | 207 | 77 | 72 | 30 | 956 |
| **Australia total (TAFE)** |  | **277** | **1,012** | **7,240** | **2,208** | **2,248** | **2,514** | **3,005** | **10,839** | **6,392** | **1,541** | **4,924** | **2,513** | **44,713** |

Source: Student Outcomes Survey 2009.

# References

Chen, Y & Meinecke, J 2013, ‘Student choice between VET and university’, in *Structures in tertiary education and training: a kaleidoscope or merely fragments? Research readings,* eds F Beddie,   
L O’Connor & P Curtin, NCVER, Adelaide.

Commonwealth of Australia 2012, *Skills for All Australians: national reforms to skill more Australians and achieve a more competitive, dynamic economy*, Canberra.

Department of Employment, Education and Training 1994, *Diversity and performance of Australian universities,* Government of Australia, Canberra.

DEEWR (Department of Education, Employment and Workplace Relations) 2011, *Annual national report of the Australian VET sector: 2010,* Government of Australia, Canberra.

Department of Education, Training and Youth Affairs 1998, *The characteristics and performance of higher education institutions*, occasional paper series 98-A, DETYA, Canberra.

European Training Federation 2012, *Proposed indicators for assessing technical and vocational education and training*, Inter-agency Working Group on TVET Indicators.

Homs, O 2007, *Euromed observatory function indicators for the governance of vocational training systems,* European Training Foundation, Torino, Italy.

IBHE (Illinois Board of Higher Education) 2003, *Establishing performance indicators to assess progress toward meeting the goals of the Illinois commitment,* report of the Performance Indicator Advisory Committee to the Illinois Board of Higher Education, Illinois.

Landman, T & Hauserman, J 2003, *Map-making and analysis of the main international initiatives on developing indicators on democracy and good governance,* United Nations Development Program,   
New York.

NCVER 2012, *Vocational education and training statistics: students and courses 2011 — publicly funded training providers,* NCVER, Adelaide.

Organization for Economic Co-operation and Development (2012), *OECD indicators of education systems*, OECD, Paris.

PhillipsKPA 2006, *Investigation of outcomes-based auditing: final report,* reportfor the Victorian Qualifications Authority.

Productivity Commission 2010, *Review of the report on government services’ performance indicator framework,* report to the Steering Committee for the Review of Government Service Provision, viewed March 2013, <www.pc.gov.au/\_\_data/assets/pdf\_file/0006/102957/independent-reference-group-report.pdf>.

*The Good Universities Guide,* 2013 edition, Hobsons Pty Ltd, Melbourne.