A performance framework for regional universities

Report for the Regional Universities Network

8 June 2018

nous

This page is intentionally blank.

Contents

Executive Summary

In the Australian Government's Mid-Year Economic Fiscal Outlook (MYEFO) in December 2017, Education Minister Simon Birmingham announced that government would freeze the maximum amount of funding provided through the Commonwealth Grant Scheme (CGS) for bachelor degree courses at 2017 funding levels for 2018 and 2019. CGS funding increases from 2020 onwards will be linked to performance and national growth in the 18-64 year old population.

Minister Birmingham has already indicated that measures tied to student retention and employment outcomes will form part of the performance funding framework. However, the Government is yet to define the full parameters of the new system and has indicated it will consult with universities before finalising anything.

The Australian higher education system has been extraordinarily successful in increasing access in recent years, providing opportunities to many in the community for the first time. Alongside this move to a universal higher education system is a growing concern that access has been to the detriment of student success. Notwithstanding relatively stable trends in attrition over the last ten years there is merit in considering attrition and retention and how universities are supporting success as well as access.

However, unless performance is carefully defined, there is a risk of rewarding the wrong behaviours and constraining innovation and opportunity for those students most in need of higher education. A narrow focus on attrition does not fully capture the expectations that both government and community have of higher education. This includes: the unique experience of participation in a university education, and the skills and services this delivers – not only to students themselves, but in the case of regional universities, their communities and economies. Government's articulation of this is clearest in the Higher Education Support Act (2003) (HESA), which sets out the objectives of higher education in Australia.[1]

This report proposes a clear and actionable performance framework for Australian universities. Nous developed this framework for the Regional Universities Network (RUN) against the background of government deliberations. We are conscious that not all regional universities are RUN universities, but believe RUN members to be a useful indicator of how performance-based funding is likely to affect regional universities. We have not considered performance measures in relation to research, given that frameworks to assess research, engagement and impact performance are already in place.

Our proposed framework:

1. Frames performance against HESA objectives which best articulates the full range of activities universities are required to deliver (teaching quality; equity; and contribution to social, cultural and economic needs) and **uses a comprehensive assessment of inputs, outputs, outcomes and broader community impact** to measure success

The framework also draws on lessons from performance frameworks adopted in overseas jurisdictions, including the UK Teaching Excellence Framework and US state systems. It combines Pennsylvania's system of combining core and optional performance measures with the UK system of using a written submissions process. In doing so, the framework will enable the Australian Government to assess university performance against HESA objectives without compromising institutional diversity.

[1] Section 2-1 of the *Higher Education Support Act 2003* (Cth) sets out the 'Objects of the Act', which includes "to support a higher education system that is characterised by quality, diversity and equity of access; and contributes to the development of cultural and intellectual life in Australia; and is appropriate to meet Australia's social and economic needs for a highly educated and skilled population; and promotes and protects free intellectual inquiry in learning, teaching and research…"

2. Applies appropriate context to retention measures and provides a level playing field by **weighting according to student profile** and **supplementing the measures with other metrics**

Our proposed framework adopts the New Zealand Productivity Commission's recent recommendation and **weights attrition and completion measures according to student profile** to provide a more accurate reflection of performance and to avoid punishing universities for enrolling students from groups with higher non-completion risk.

We also note that employment outcomes are a better reflection of performance than attrition and completion, but do not capture other important HESA objectives.

To ensure HESA objectives are fully captured, our framework measures university performance against:

- **Six core performance measures**: **employer satisfaction**, **student satisfaction**, and **participation rates of equity groups** in addition to weighted attrition and completion rates and employment outcomes
- **Three optional performance measures** which universities can select from a pre-approved list of measures including **regional employment outcomes**, **staff incentives for teaching performance and community engagement**, **workplace learning**, and **economic value to community**
- **Up to one institution-specific measure** approved by government, which could include measures such as **the success of dual sector arrangements** or **support for regional disaster relief**

In doing so, the framework incorporates all three equity performance measures recommended by the Higher Education Equity Ranking Project, with participation rates included as a core measure and the ratio of equity groups/non-equity for attrition and completion included in the list of optional measures. It also draws on student and employer satisfaction measures captured by QILT and the Good Universities Guide.

3. Evaluates performance through a submission process to government in which universities have the opportunity to **articulate the strategic context and narrative behind relevant performance measures** and **explain institutional difference**

This process would allow universities to supply institutional data, case studies and a narrative which draws out their performance against a unique institutional mission.

We propose that the submission be evaluated through an independent process involving broad representation from within the sector.

Under the Teaching Excellence Framework in the UK, a panel of experts, university leaders and students review data and a 15-page submission before making a judgment on what 'medal' to award a university. The submission plays a critical role in determining whether institutions receive Gold, Silver of Bronze.[2]

Figure 1 overleaf shows how our framework draws on HESA objectives to capture the full range of university activities and how these align with outputs, outcomes and broader impact. We note that it is not always a strictly linear relationship between inputs (i.e. CGS funding) and some of the outputs (e.g. attrition and completion rates). Figure 2 illustrates how our proposed framework includes a mix of core and optional measures assessed through a submission process

[2] In the last TEF round nearly one-quarter of providers were given a different award to what the standard metrics indicated Simon Baker, 'TEF: In-depth analysis of the results' *Times Higher Education*, 29 June 2017, available at <https://www.timeshighereducation.com/features/tef-in-depth-analysis-of-results>.

Figure 1 - Our framework draws on HESA objectives to capture the full range of university activities and how these align with outputs, outcomes and impact

Objectives →	Inputs →	Outputs →	Outcomes →	Impact
Teaching quality	CGS funding	Attrition; Completion; optional measures	Student satisfaction rates; optional measures	Lower unemployment, higher living standards
Equity of access	CGS funding; HEPPP	Participation rates for equity groups; optional measures	Optional measures (e.g. employment outcomes for equity groups)	Social mobility and reduced disadvantage
Meets social, cultural & economic needs of Australia	All funding	Optional measures (e.g. % graduates in areas of national / regional priority)	Employer satisfaction; employment outcomes; optional measures	More agile & innovative economy, thriving local communities, happier and healthier people

Figure 2 - Our proposed framework includes a mix of core and optional measures assessed through a submission process

HESA CATEGORY	CORE (six)	OPTIONAL (three)	INSTITUTION-SPECIFIC (up to one)
Teaching quality	1. **Completion (weighted)** 2. **Attrition (weighted)** 3. **Student satisfaction**	• Each institution to select optional measures from a pre-approved list • Example: **% students engaged in work placements**	• Each institution may negotiate an additional metric • Example: **success of arrangements for articulation with VET**
Equity	4. **Participation rates for equity groups** (low SES, Indigenous, regional & remote, disability)	• Each institution to select optional measures from a pre-approved list • Example: **Completion ratios equity groups/non-equity**	• Each institution may negotiate an additional metric • Example: **HEPPP evaluation**
Meeting social, cultural and economic needs of the community	5. **Employer satisfaction** 6. **Employment outcomes**	• Each institution to select optional measures from a pre-approved list • Example: **Regional employment outcomes**	• Each institution may negotiate an additional metric • Example: **Support for disaster relief**

CONTEXT (submission)

Written submission to pull together the results from all 9-10 measures and provide:

- **Narrative** (including case studies)
- **Context** (including the opportunity to mitigate any poor performance on metrics)
- **Further information and data** on a university's performance against HESA objectives

Background

Successive Australian Governments have proposed and/or introduced performance-based funding in higher education over the last two decades. As part of its 2003 higher education reform package, the Howard Government instituted a Learning and Teaching Performance Fund. From 2009, the Rudd/Gillard Government replaced this fund with their own system of 'performance compacts', under which the Australian Government negotiated targets with each institution.

In the most recent iteration of performance funding for universities, Education Minister Simon Birmingham has announced plans to link a degree of funding growth to performance outcomes from 2020 for all Australian universities. Public statements by the Minister indicate a focus on the student, including retention and graduate outcomes.

The Regional Universities Network (RUN) engaged Nous in April 2018 to develop a performance framework for the Australian Government to consider during its consultation process. In doing so, we have worked closely with RUN members to identify the most effective framework and set of measures which track a more complete picture of university performance.

We know some students face additional obstacles to complete their degree, with the effect compounding for students in multiple at-risk groups. Only half of part time students complete within 9 years, compared to 80% for full time students.[3] Students with a disability, Indigenous students, mature age students, low SES students and low- or no-ATAR students all have a statistically lower likelihood of completing their degree.[4]

The Australian higher education system has been extraordinarily successful in increasing access in recent years, providing opportunities to many in the community for the first time. Alongside this move to a universal higher education system is growing concern that access has been to the detriment of student success. Notwithstanding relatively stable trends in attrition over the last ten years, there is merit in considering attrition and retention, and how universities are supporting success as well as access.

However, unless performance is carefully defined, there is a risk of rewarding the wrong behaviours and potentially encouraging dysfunctional behaviours, including constraining innovation and opportunity for those students most in need of higher education. RUN universities massively exceed the national average for part time, off-campus, mature-age, Indigenous, Low SES, Regional and Remote students, and students with disabilities.[5] This should be viewed as a positive, rather than a situation with the potential to compromise receipts of performance-based funding.

A narrow focus on student retention measures does not capture the full range of expectations that both government and community have of higher education. These expectations include equity of access to participation, the skills and services universities deliver to students, and the contribution universities make, in the case of regional universities in particular, to their communities and economies. Government's articulation of this is most clearly set out in the Higher Education Support Act (2003) (HESA), which sets out the objectives of higher education in Australia.

[3] Cherastidtham, I., Norton, A. and Mackey, W. (2018) *University attrition: what helps and what hinders university completion?*, Grattan Institute.

[4] Cherastidtham, I., Norton, A. and Mackey, W. (2018) *University attrition: what helps and what hinders university completion?*, Grattan Institute. Note that age, Indigeneity and ATAR are much more significant indicators of low completion than other attributes when controlled for other factors. For example, low-SES students only have a slightly higher rate of non-completion than their peers when other factors such as ATAR, enrolment type and campus location are taken into account.

[5] Australian Department of Education and Training, 'Student Data 2016', *Higher Education Statistics*, 25 October 2016.

Challenges for the RUN include:

- RUN universities, because of their focus on expanding access to regional students and students from disadvantaged backgrounds, will be more likely to have higher unweighted attrition and lower completion rates than their metropolitan counterparts. Nearly half of students at a regional campus do not complete their degree within eight years, compared to fewer than one in three at a major city campus[6]
- RUN universities social and economic contribution go beyond simple measures of completions and employment and include their contribution to jobs and growth
- Crucially, while maintaining their rightful place in higher education, RUN universities have a different mission that provides for regional Australia

In developing this performance framework, Nous conducted a literature review to identify lessons from earlier experiences in Australia, as well as the UK, the US and New Zealand. Looking at how performance measures have played out elsewhere, we developed our understanding of how effective various indicators could be at capturing the full range of university performance. It also informed our approach in developing a framework which combines standard measures, weightings, special indicators and a submissions process to enable RUN universities to be judged against their unique strengths and mission.

For a performance framework to enable RUN members to play to their strengths, it should properly capture the role regional universities play, as set out below in Figure 3. To enable this to happen, our proposed performance framework:

- Includes optional and institution-specific measures, along with a submission process so that regional universities can be judged on the unique role they serve within the sector and their local communities
- Applies weighting and context to retention measures to avoid punishing regional universities for successfully expanding access to higher education for students from disadvantaged backgrounds

Figure 3 - The unique role played by RUN universities

RUN universities:

Build diversity within the sector: each RUN university campus has its own unique educational and social mission focused on the needs of its respective community. Some campuses integrate unique dual sector arrangements, while others offer unique courses tailored to the needs of the region

Are anchor institutions for their local community: they play a role which extends beyond teaching and research activities and 'value add' to the economy. These universities provide community facilities, generate local economic activity and are an irreplaceable source of social and cultural wellbeing

Lead the sector in expanding access: they have some of the highest enrolment rates of equity groups including Indigenous, first in family, low SES, regional and remote, and people with a disability

Offer innovative teaching methods, including online course delivery: RUN universities have to innovate because of their unique student profiles, resourcing arrangements and community needs. This includes leading the sector in delivering high quality online courses to students who wouldn't otherwise be able to attend university

[6] Cherastidtham, I., Norton, A. and Mackey, W. (2018) *University attrition: what helps and what hinders university completion?*, Grattan Institute.

1 We propose a robust performance framework to capture the full range of university performance

The current focus on retention measures and employment outcomes does not fully capture the expectations that both government and community have of higher education, including universal access to a university education, useful skills and workforce preparedness for graduates, and in the case of regional universities in particular, contribution to local communities and economies. HESA provides a clear direction for what government expects from the university sector. The HESA objectives include supporting a higher education system that:

- is characterised by **quality**, **diversity** and **equity of access**;
- contributes to the development of **cultural and intellectual life in Australia**; and
- is appropriate to **meet Australia's social and economic needs** for a highly educated and skilled population; and
- promotes and protects **free intellectual inquiry in learning, teaching and research**

If the Australian Government is to make some Australian Grants Scheme (CGS) funding contingent on performance, it should be against these objectives.

The Australian Government's performance framework should also observe the Berlin Principles for higher education performance measures.[7] Some of these principles provide particularly important guidance for performance funding in an Australian context:

- Principle #3: **Recognise the diversity of institutions** and take the different missions and goals of institutions into account
- Principle #8: **Measure outcomes in preference to inputs** whenever possible

Although there is some debate on the extent of diversity within the Australian higher education system, the performance framework should promote, rather than constrain greater diversity within the sector. We also note that there is reliable evidence of diversity between Australian universities.[8]

1.1 Our proposed framework measures outputs, outcomes and impact against relevant HESA objectives

In our literature review and consultations with RUN members, we considered three broad approaches to performance frameworks:

- A 'balanced scorecard' framework – a blunt, highly quantitative approach useful for ranking large numbers of institutions against simple input and output metrics

[7] Berlin Principles on Ranking of Higher Education Institutions, 20 May 2016, Berlin, available at < https://www.che.de/downloads/Berlin_Principles_IREG_534.pdf>

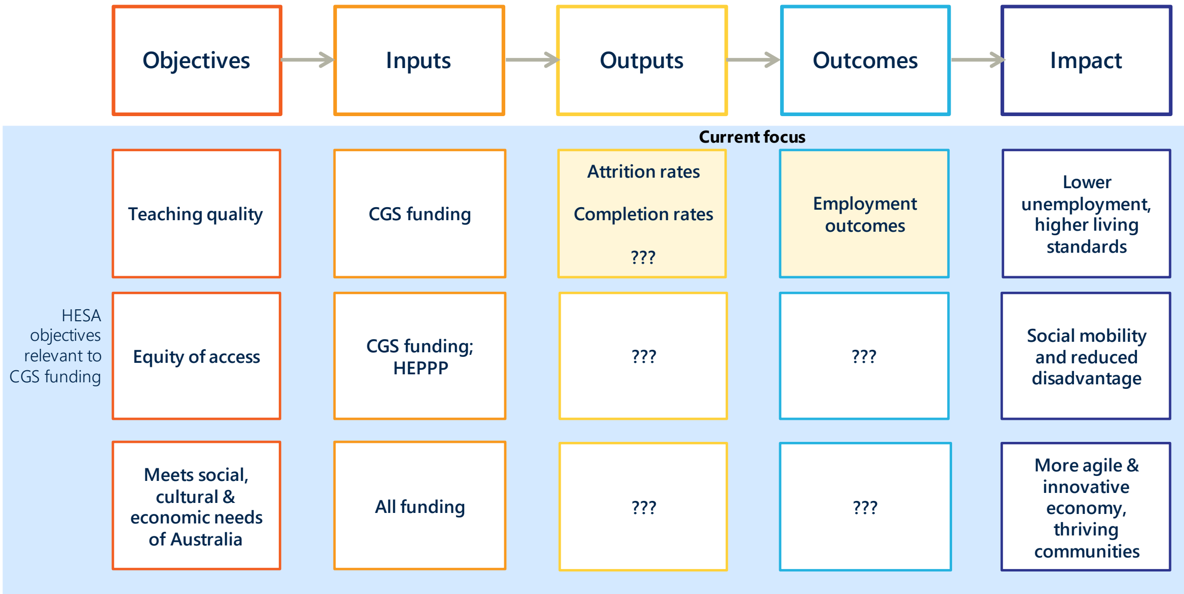
[8] ACER research in June 2013 used cluster analysis to highlight the degree of diversity in the Australia higher education sector: Australian Centre for Education Research, *Profiling diversity of Australian universities*, June 2013, available at <https://research.acer.edu.au/cgi/viewcontent.cgi?article=1035&context=higher_education>.

- The University of Michigan's 'dashboard of indicators' – a highly contextual and qualitative approach which provides indicators of broader effectiveness
- A 'program logic' framework – an evaluation of how institutions translate objectives and inputs into outputs, outcomes and impact

Within the Australian Public Service, performance evaluation customarily focuses on community needs, government policy, program objectives, inputs, outputs and actual outcomes[9].

Figure 4 provides an indication of what such a framework might look like if we started with objectives set out in the Higher Education Support Act and considered a wide range of measures to capture the many facets of university performance. We have excluded research objectives/measures, as these are captured under other Australian government performance framework

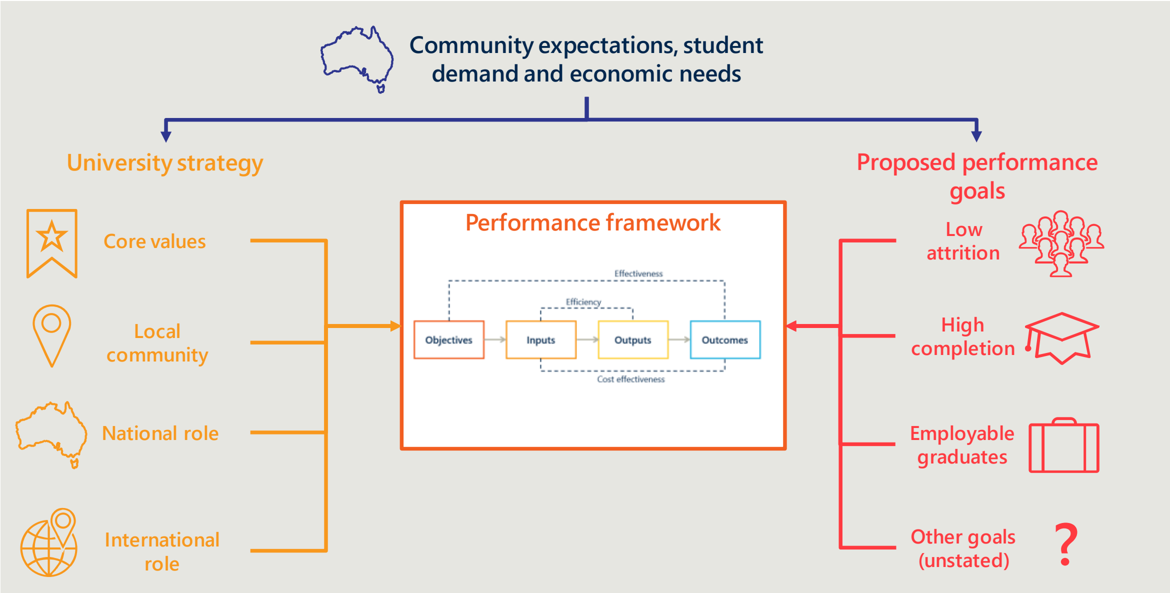
Figure 4 - Our suggested performance framework will require additional performance measures



As demonstrated in Figure 5, this approach means that university performance can be assessed against Government policy objectives and considered in the context of differing institutional missions and the expectations of students and the broader Australian community.

[9] Althaus, C, Bridgman, P, Davis, G, *The Australian Policy Handbook*, 2007, Allen & Unwin, Sydney, Australia, pg. 183.

Figure 5 - Our proposed performance framework will recognise institutional diversity and address community expectations



1.2 Performance frameworks in other jurisdictions provide useful lessons to capture institutional diversity

Various jurisdictions around the world use performance measures on universities. These measures are generally used for performance-based funding or some form of university rankings aimed at prospective students. For the purposes of this report, we have focused on Australia, New Zealand, the United Kingdom and some select jurisdictions within the United States. These jurisdictions have similar higher education systems and represent the most advanced thinking on university performance measures.

Australia

A number of measurement systems and frameworks are used currently to assess Australian universities' performance. The focus of these measures is largely to provide information to prospective students to facilitate consumer choice, rather than measure performance which could be tied to funding. These include:

- Quality Indicators of Learning and Teaching (QILT), which collects data on student satisfaction, employer satisfaction, graduate employment rates and graduate starting salaries
- International rankings such as the Times Higher Education and QS, both of which include some measurement of reputation (THE measures reputation generally, while QS focuses on employers)
- The Good Universities Guide, which provides a star rating on a large range of measures including social equity, student demand, graduate salaries, employment outcomes, staff: student ratios, student satisfaction with teaching quality, student support and retention rates.

As part of its 2003 higher education reform package, the Howard Government established a Learning and Teaching Performance Fund to incentivise universities to improve teaching quality. This fund was intended to provide additional money to participating universities each year on the basis of student experience criteria measured from the Graduate Destination Survey and Course Experience Questionnaire, as well as student attrition and progression data. However, due to insufficient funding the scheme was eventually replaced in 2009.

In 2009, the Australian Government announced plans for a separate pool of performance-based funding in the form of special 'compacts' with individual institutions, in which the Government would individually negotiate targets with universities in three key areas: participation and social inclusion, including the enrolment of more students of low socio-economic status; the quality of student experience; and the quality of learning outcomes. However, without significant consequences – good or bad – compacts have not been as potent as originally claimed.[10]

More recently, significant work has taken place in an attempt to measure university performance on equity of access. A recent report by Curtin University and the Australian Centre for Education Research on the Higher Education Equity Ranking Project recommended using performance elements covering participation, retention, and completion, with each to be measured by:[11]

- For participation: the proportion of equity students in the institution's domestic undergraduate population divided by the relevant State/Territory reference share for that equity group.
- For retention: the institutional retention rate for equity students divided by the institutional retention rate for all other students not in that equity group.
- For completion: the institutional completion rate for equity students divided by the institutional completion rate for all other students not in that equity group.

England

In 1993, the UK Government introduced the Teaching Quality Assessment (TQA). The original intention of the TQA was for government inspectors to make teaching quality assessments on a subject-by-subject basis with performance linked to additional funded student places for the most successful institutions. However, the government received expert advice against using government inspectors and instead replaced this process with reviewers from within the sector, to operate under government supervision with limited use of metrics. Nevertheless, the system ran into countless difficulties, with the assessment process plagued by inconsistency, increasingly less strict standards and questions regarding the assessment process and the quality assurance process operated by the higher education regulator.[12] The system was eventually dropped in 2004.

In 2016, the UK Government announced a new system called the 'Teaching Excellence Framework (TEF). According to former Education Minister Jo Johnson, TEF was intended to "give students clear, understandable information about where the best teaching is on offer and for the first time place teaching quality on a par with research at our universities".[13] The first round of assessments in 2017 would have minimal tangible consequences, but from 2018 the UK Government intended for the medal system to determine which universities would be allowed to increase their fees, and by how much. An overview of the TEF system is set out below in Figure 6. [14]

---

[10] Gwilym Croucher, 'Who does no one seem to like compacts?', the Conversation, 9 September 2015, available at < https://theconversation.com/why-does-no-one-seem-to-like-compacts-47259>.

[11] Edwards, D., Koshy, P., McMillan, J., Pitman, T., & Zhang, L.T., *Higher Education Ranking Report: Stage 1 Report*, April 2018, Curtin University & Australian Council for Educational Research.

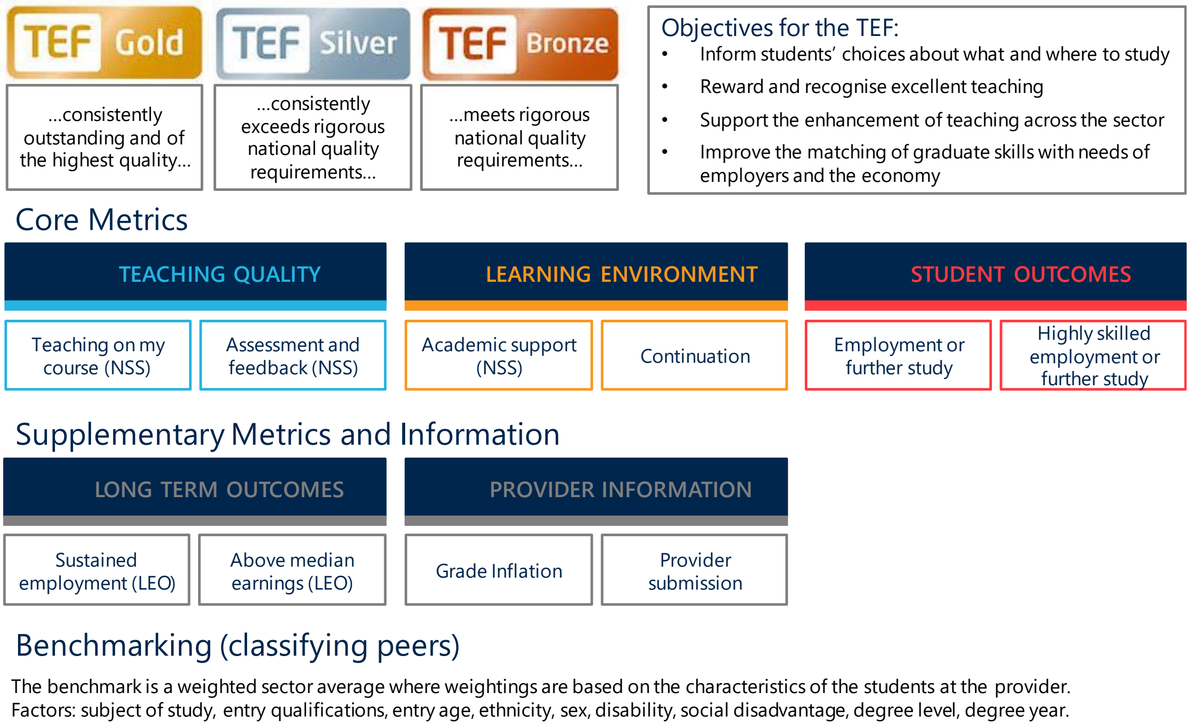
[12] Roger Brown, 'Teaching Excellence Framework: a case of history repeating?', *Times Higher Education*, 12 October 2015, available at <https://www.timeshighereducation.com/blog/teaching-excellence-framework-case-history-repeating>.

[13] Richard Adams, 'English Universities to be rates Gold, Silver and Bronze', *The Guardian,* 30th September 2016, available at <https://www.theguardian.com/education/2016/sep/29/english-universities-ranked-gold-silver-and-bronze>.

[14] It should be noted the TEF is a UK Government policy, but does not cover Northern Ireland and Scotland.

It is worth noting that the TEF uses a highly contested methodology for assessing teaching quality, and has sparked lengthy debate about the merits of using proxy measures to determine performance.[15]

Figure 6 - Overview of the TEF medal system



To determine which medal a university receives, a 'TEF Panel' comprised of Vice-Chancellors, education experts and students makes an assessment based on two inputs:

1. A set of proxy measures to assess teaching and learning quality and award gold, silver and bronze medals. These measures include:
   - three metrics based on the National Student Survey: teaching on my course; assessment and feedback; and academic support
   - non-continuation rates
   - graduate employment or further study
   - highly skilled employment or further study
2. A qualitative submission process, in which universities can provide a narrative of up to 15 pages in response to a set of 11 criteria.

Importantly, assessors do not look at raw metrics, but rather at how many times a university was flagged as having a gap between its performance on each metric and its benchmark. The benchmark takes into account factors such as the age of students and their field of study (and others, depending on the metrics).[16]

---

[15] See, for example Uttle, B, White, C. A, Gonzalez, D.W, 2017, Meta-analysis of faculty's teaching effectiveness: Student evaluation of teaching ratings and student learning are not related, *Studies in Educational Evaluation*, 54, 22-42.

[16], Simon Baker, 'TEF: In-depth analysis of the results' *Times Higher Education*, 29 June 2017, available at <https://www.timeshighereducation.com/features/tef-in-depth-analysis-of-results>.

United States

The US provides a diverse mix of experience with performance-based funding. While some states such as California have stayed away from outcomes-based performance funding, 29 states have had performance funding at some point.[17] Of these states, the frameworks adopted by Tennessee and Pennsylvania are considered to be the most successful, based on their lengthy history with performance-based funding and findings from academic studies in relation to impact.[18]

Overall performance-based funding in the United States has had mixed success – 11 states have discontinued the approach indefinitely and a further 11 have tried and failed to embed performance-based funding before later re-instituting. Studies in the US have three main theories explaining why states like Pennsylvania and Tennessee have had much greater stability and success than other states:

1. Designing appropriate measures – According to Dougherty and Natow, Tennessee has been more successful in the design and implementation of performance indicators than in less stable systems like Florida (which had year-to-year funding allocations). Tennessee introduced new performance indicators systematically, following planned program reviews every five years with gradual shifts done in consultation with key stakeholders.
2. Accounting for institutional diversity – measurements that account for institutional diversity within a jurisdiction have proven to be more successful in terms of longevity and to some extent outcomes.
3. A collaborative process to define performance measures – This requires a commitment to designing metrics that account for complex student pathways, different institutional conditions (e.g. resources, missions, economic context and selectivity), and different community stakeholders.

Pennsylvania

Pennsylvania uses five mandatory indicators and five indicators selected by individual institutions. All indicators are measured via progress toward institution-specific goals and against benchmark (i.e. similar) institutions. Notably, institutions are measured on progress against previous performance rather than in absolute terms.

The measures are as follows:[19]

1. **Student Success**: mandatory measures are **degrees conferred** and **closing the achievement gap** for first year students from disadvantaged backgrounds, while optional measures include:

    Student Persistence (i.e. % students returning for a third and fourth academic year)

    Value-Added (based student improvement across standardised testing scores)

    STEM/Health (increase in degree recipients in high need programs such as science, technology, engineering, mathematics and healthcare)

    Closing the achievement gap for transfer students

2. **Equity:** mandatory measures include **closing access gaps** for first year students from disadvantaged backgrounds and **faculty diversity,** while optional measures include:

    Faculty Career Advancement (for non-majority and female academic staff)

    Professional staff diversity

[17] Ziskin, M. B., Hossler, D., Rabourn, K., Cekic, O., & Hwang, Y. (2014). *Outcomes-Based Funding: Current Status, Promising Practices and Emerging Trends*. Toronto: Higher Education Quality Council of Ontario.
[18] Ibid, pg 10.
[19] Pennsylvania State System of Higher Education, 'Conceptual Framework', *2012–2017 Performance Funding Program*, available at < https://www.esu.edu/faculty_staff/oiepa/research/documents/pdf/PBF_Conceptual_Framework2013.pdf>.

Student Diversity

Diversity of transfer students

3. **Stewardship:** the only mandatory measure is *Private Support* (i.e. Annual amount of private funds raised by University and Foundations), while optional measures include:

    Facilities Investment

    Support Expenditures as Percent of Cost of Education

    Employee Productivity

4. **University-Specific Indicators:** Universities had the opportunity to create up to two optional performance measures which had to be approved by the State for inclusion in the performance funding program. Proposals followed a prescribed process for defining the performance indicator.

Tennessee

Tennessee uses a system of performance-based funding for its half-dozen state universities. Universities receive an appropriation based on a weighted formula using metrics including:[20]

- Degrees granted per FTE
- The six-year graduation rate
- Bachelors and Associate degrees awarded; Specialist / Ed. Masters degrees awarded; and Doctoral / Law degrees awarded

The formula is weighted according to:

- Institutional priorities and mission
- Focus populations (e.g. low income) for student progression and undergraduate awards to encourage completion at public institutions

Universities can also access an additional 5.45% of their operating grant in line with an 'Institutional Quality Score', which draws on the quality assurance process and uses metrics including licensure pass rates, accreditation, and success with underrepresented populations.

Equity measures in the United States

Washington Monthly, a bimonthly non-profit magazine of United States politics and government, produces one of the few US university performance frameworks that considers issues of equity explicitly in its calculation. Washington Monthly rate schools and colleges based on their contribution to the public good in three broad categories:

- Social Mobility (recruiting and graduating low-income students),
- Research (producing cutting-edge scholarship and PhDs), and
- Service (encouraging students to give something back to their community).[21]

Another good example of an equity performance framework in the united states is the Social Mobility Index (SMI), which Oregon-based higher education company CollegeNET developed in 2014 in an explicit

[20] Tennessee Higher Education Commission, *2015-2020 Outcomes Based Funding Formula*, accessed on 13 May 2018, available at < https://www.tn.gov/thec/bureaus/finance-and-administration/fiscal-policy/redirect-fiscal-policy/outcomes-based-funding-formula-resources/redirect-outcomes-based-funding-formula-resources/2015-20-outcomes-based-funding-formula.html>.

[21] Edwards, D., Koshy, P., McMillan, J., Pitman, T., & Zhang, L.T., *Higher Education Ranking Report: Stage 1 Report*, April 2018, Curtin University & Australian Council for Educational Research.

effort to shift policy focus away from historical views of prestige to encourage a greater focus on access. It considers five main variables and assigns the following weightings or 'sensitivity score':

Variable	Weighting
Tuition fees: the higher the tuition, the lower the SMI ranking	291
Economic background of students: the percentage of students within the student body whose family incomes are less than or equal to the national median.	318
Graduation rate	207
Early career salary outcomes for graduates	160
Endowment (e.g. donations to the school) – the higher the endowment, the lower the SMI ranking	74

New Zealand

In 2010, the New Zealand Government announced that between 5 – 10% of university funding would be made contingent on performance against course completion rates and other metrics. The Tertiary Education Minister at the time, Steven Joyce stated that:

> ***"The performance-linked funding model will provide financial incentives for institutions to continually work to improve the educational performance of their students…***
>
> ***Educational performance will be measured using indicators like successful course completion, qualification completion and student progression."***[22]

After working through the system with the Education Ministry and the Tertiary Education Commission, New Zealand landed on its current system where **up to 5% of funding** is based on performance in the previous year against **course completion** and **first year retention rates**, along with two **optional measures** (qualification completion rate and progression to a higher level qualification).

However, the NZ Productivity Commission recommended in 2017 that the Government **discontinue Performance-Linked Funding** and instead use measures which:[23]

- use metrics that are adjusted for characteristics of the student intake
- avoid penalising providers when students leave study for reasons unrelated to provider performance
- affect a consequential amount of funding

In its response, the NZ Government said it would: explore the potential for new or improved performance measures to encourage:[24]

- greater efficiency and improved education performance (including consideration of value-added EPIs)
- increased participation, achievement, and outcomes for at-risk students

[22] Maggie Tait, 'Tertiary education funding to be performance linked', *New Zealand Herald*, 9 March 2010, available at < https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10630881>.
[23] New Zealand Productivity Commission, 'New Models of Tertiary Education', 21 March 2017, available at < https://www.productivity.govt.nz/inquiry-content/2683?stage=4>.
[24] The Treasury of New Zealand, 'New Models of Tertiary Education - Government Response to Productivity Commission Report', 26 July 2017, available at < https://treasury.govt.nz/publications/information-release/new-models-tertiary-education-government-response-productivity-commission-report>.

- support improved graduate employment outcomes (including the development of new graduate employment measures for industry training organisations)

1.3 Our proposed framework draws on lessons from other jurisdictions to capture institutional differences

Drawing on the experience within Australia and abroad on university performance funding, we propose a framework which:

- Incorporates Pennsylvania's system of combining core performance measures with optional performance measures institutions can select or negotiate in line with their institutional mission
- Incorporates the UK TEF's system of using a written submissions process to ensure universities have an opportunity to demonstrate unique institutional strengths and mitigate potential negative findings from performance measures by providing contextual information
- Adopts the recommendations of New Zealand's Productivity Commission by weighting performance measures according to student profile and using additional data to ensure attrition measures are adjusted for students who leave university for reasons not related to institutional performance (our proposed approach to weighting and context is discussed below in Section 2)
- Incorporates all three of the equity performance measures recommended by the Higher Education Equity Ranking Project, with participation rates included as a core measure and the attrition and completion ratios included in the list of optional measures
- Draws on measures currently captured by QILT and the Good Universities guide, including student satisfaction and employer satisfaction

Our proposed framework is set out in Figure 7 overleaf.

Figure 7 - Our proposed framework adopts lessons from other jurisdictions including the UK and Pennsylvania

HESA CATEGORY	CORE (six)	OPTIONAL (three)	INSTITUTION-SPECIFIC (up to one)
Teaching quality	1. **Completion (weighted)** 2. **Attrition (weighted)** 3. **Student satisfaction**	• Each institution to select optional measures from a pre-approved list • Example: **% students engaged in work placements**	• Each institution may negotiate an additional metric • Example: **success of arrangements for articulation with VET**
Equity	4. **Participation rates for equity groups** (low SES, Indigenous, regional & remote, disability)	• Each institution to select optional measures from a pre-approved list • Example: **Completion ratios equity groups/non-equity**	• Each institution may negotiate an additional metric • Example: **HEPPP evaluation**
Meeting social, cultural and economic needs of the community	5. **Employer satisfaction** 6. **Employment outcomes**	• Each institution to select optional measures from a pre-approved list • Example: **Regional employment outcomes**	• Each institution may negotiate an additional metric • Example: **Support for disaster relief**

CONTEXT (submission)

Written submission to pull together the results from all 9-10 measures and provide:

- **Narrative** (including case studies)
- **Context** (including the opportunity to mitigate any poor performance on metrics)
- **Further information and data** on a university's performance against HESA objectives

2 Attrition and completion measures should be weighted and supplemented with other metrics

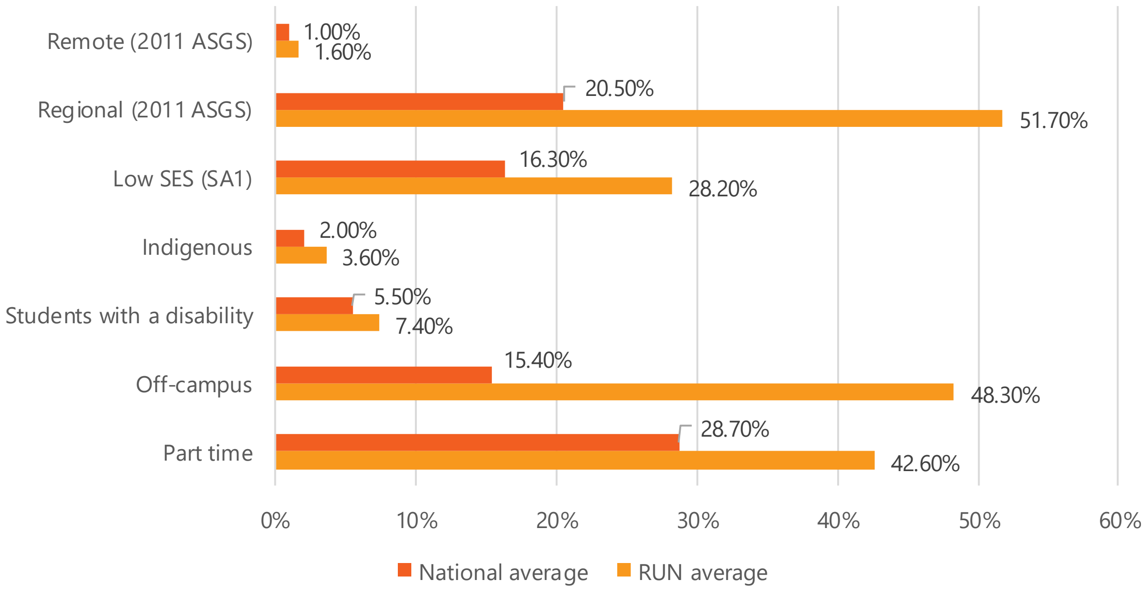
There are challenges and opportunities for RUN members with attrition, completion and performance measures. RUN universities enrol larger numbers of part time students, off-campus students, students with disabilities, and Indigenous, Low SES, Regional and Remote students. Such students face additional obstacles in staying in higher education which is underscored by higher attrition and lower completion rates at RUN universities. However, other measures including QILT and the Good Universities Guide indicate that RUN universities perform well on students and employer satisfaction, along with employment outcomes and graduate starting salary. Considered together, this shows the importance for a framework to provide appropriate weighting and additional indicators of performance.

2.1 Attrition and completion measures should be weighted according to student profile

RUN universities average a six-year completion rate of below 50%, compared to a national average of 62.5%.[25] According to the Good Universities Guide, all RUN members are in the bottom half for retention of school leavers (noting that 18 universities are equal bottom in this measure).

However, these figures need to be considered in the context that RUN universities massively exceed the national average for part time students, off-campus students, students with disabilities, and Indigenous, Low SES, Regional and Remote students (Relevant Student Groups).[26]

Figure 8 – RUN universities have a unique student profile



[25] Australian Department of Education and Training, 'Completion rates of higher education students: Cohort analysis, 2005 – 2015'.
[26] Australian Department of Education and Training, 'Student Data 2016', *Higher Education Statistics*, 25 October 2016.

According to recent analysis by the Grattan Institute, all of these Relevant Student Groups are at a significantly higher risk of non-completion:[27]

- Only half of part time students complete within 9 years, compared to 80% for full time students
- Low-SES students have a non-completion risk of 35%, compared to 25% for the top quartile SES (although when controlling for ATAR, this drops to 33% and 29% respectively)
- Nearly half of students at a regional campus do not complete their degree within eight years, compared to fewer than one in three at a major city campus
- Even controlling for other observable attributes (including ATAR and socio-economic status):
    - Students with a disability face an average non-completion risk of about 36%, about five percentage points higher than students without a disability
    - Indigenous students face an average non-completion risk of about 45%, compared to 30% for non-Indigenous students
    - Students who commence in their early 20s face a non-completion risk of 35%, compared to 29% for students who commence in their late teens
    - Remote students have a non-completion risk of about 33% (3% higher than for students from major cities), and students from very remote locations have an even higher risk, at 36%

Research indicates that these Relevant Student Groups have much higher non-completion and attrition rates because they face structural challenges which are unrelated to their academic capability or the performance of their university.[28] Challenges faces by these students include travel, insufficient access to high speed internet, cost of living, employment commitments, challenges to wellbeing (including financial stress and isolation from support networks), and challenges fitting in with peers and developing a sense of belonging and place. Belonging to more than one Relevant Student Group exacerbates these challenges.

To measure university performance on attrition and/or completion without accounting for equity group enrolments would punish the universities who have made the largest contribution towards expanding equity of access under the demand driven system in line with the Bradley Review of Higher Education.

On the basis of research into attrition and completion rates and consultations with senior representatives of all RUN universities, we suggest the following:

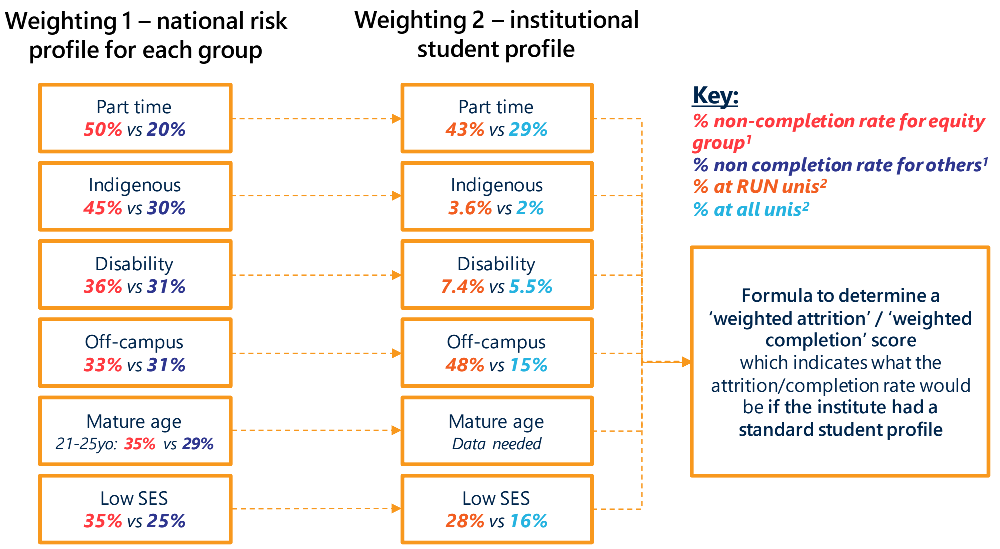
- **Attrition and completion rates should be weighted according to student profile** to ensure that universities are not punished for enrolling students from Relevant Student Groups
- **Weighting is preferable to benchmarking against similar institutions –** it is simpler and more accurate than comparing universities against similar institutions
- **Weighting is preferable to benchmarking against past performance** – annual metrics are volatile and vary according to factors beyond the control of an institution (especially in high-growth universities). At the very least, figures should be calculated using a rolling average rather than year-on-year change

As shown in Figure 9, weighting will need to account for both the numbers of equity enrolments and the non-completion risk for each Relevant Student Group. Much of the data needed for this process is already available.

---

[27] Cherastidtham, I., Norton, A. and Mackey, W. (2018) *University attrition: what helps and what hinders university completion?*, Grattan Institute. The only exception is regional students who move to a metropolitan campus, who have a similar non-completion risk to other students. However, this exception obviously does not apply for RUN universities.
[28] Nelson, K., Picton, C., McMillan, J., Edwards, D., Devlin, M. & Martin, K. (2017). Understanding the Completion Patterns of Equity Students in Regional Universities. The National Centre for Student Equity in Higher Education (NCSEHE), Curtin University: Perth.

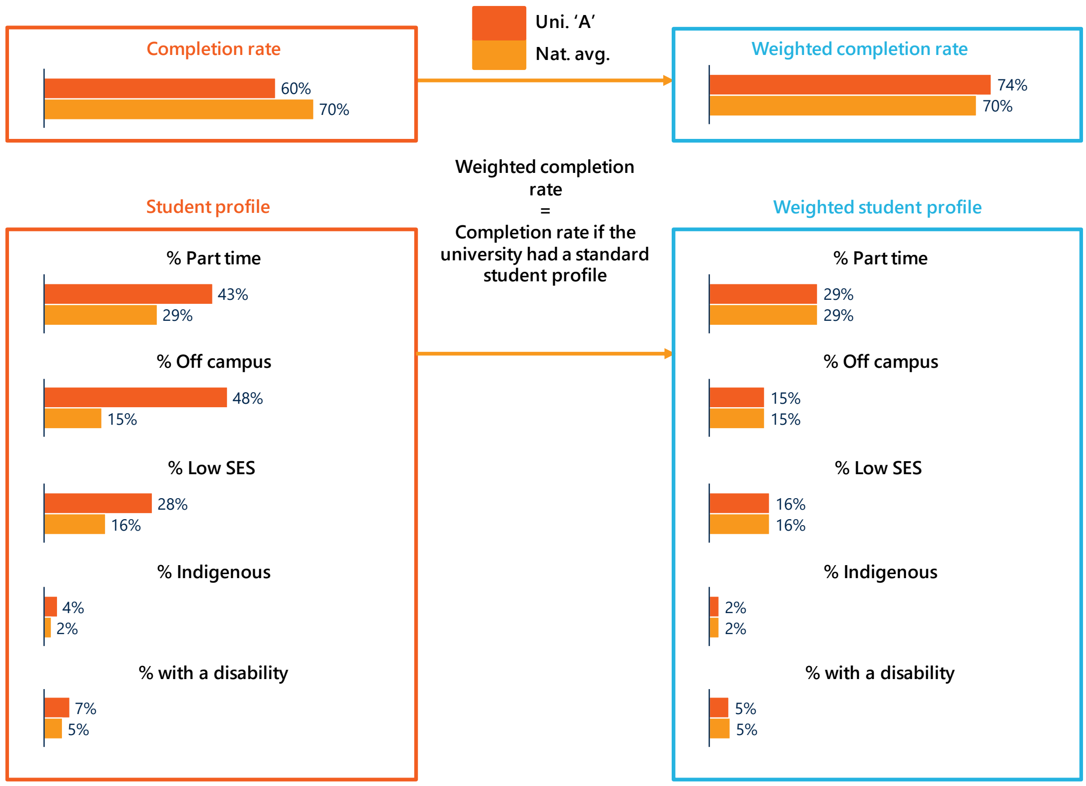
Figure 9 - Attrition and completion should be weighted to account for different student profiles



1. Source: Grattan Institute, 2018. Except for Low-SES, non-completion rates are controlled for other variables, including other personal characteristics and ATAR. We would recommend not controlling for ATAR, as universities should not be punished for having a different ATAR profile.
2. Source: Commonwealth Department of Education and Training, 'Student Data 2016', Higher Education Statistics, 25 October 2016.

Figure 10 demonstrates how this approach would calculate the completion rate for a hypothetical 'University A'. University A has a six-year completion rate of 60% - well below the national average of 70%. However, it also has significantly higher proportions of students with high non-completion risk, including part time, off campus and low-SES students. The weighting formula takes this into account and calculates what the university's completion rate would be if it had average numbers of these student cohorts.

Figure 10 - The weighting formula should generate the completion/attrition rate each institution would have if its student profile was the same as the national average



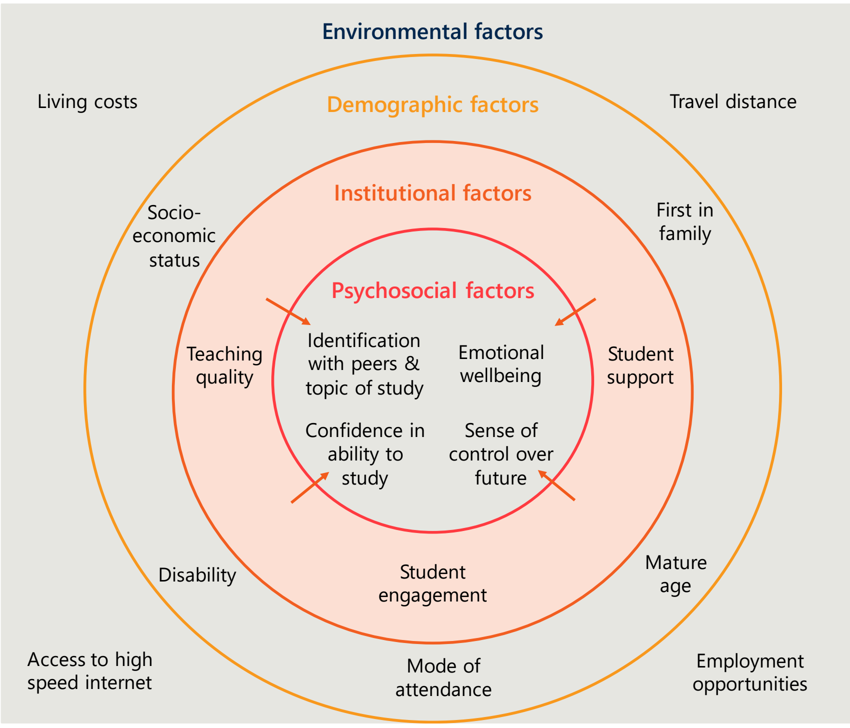
2.2 Attrition measures should be broken into categories to show context and focus on attrition within universities' control

The way attrition is currently reported (i.e. students not progressing immediately to their second year of study) covers a range of student behaviours – including students dropping out of study due to failing units, deciding university is not for them, deciding to take a break due to family or other reasons, lowering their study load and transferring into another institution or into employment. Recent research from the Grattan Institute indicates that over 40 per cent of students who leave would still have begun their degree if they could go back.[29]

To provide greater context behind attrition figures, the Department of Education and Training could collect data from exit surveys (3-6 months after leaving) to show why students left, including whether it was into meaningful employment, whether they intend to return to study, and whether they left university due to factors outside of their universities' control. Alternatively, attrition data could also be triangulated against pass rates to identify what proportion of students leaving after the first year passed all their units.

Universities should strive to support students and retention, however can only influence some of the many causes of student attrition. Figure 11 draws on recent Australian research into the causes of attrition within RUN universities to show what universities can reasonably expect to influence through teaching quality, student support and learning environment.[30] It is these institutional factors and their influence on students' psychosocial engagement with study which should form the focus of performance measures. By breaking attrition down into categories to show context, such a measure can represent institutional performance more effectively.

Figure 11 - The causes of attrition are complex and universities are limited in their influence over some of the causal factors



[29] Norton, A., Cherastidtham, I., and Mackey, W. (2018). Dropping out: the benefits and costs of trying university. Grattan Institute.
[30] Diagram developed by Nous based on Nelson, K., Picton, C., McMillan, J., Edwards, D., Devlin, M. & Martin, K. (2017). Understanding the Completion Patterns of Equity Students in Regional Universities. The National Centre for Student Equity in Higher Education (NCSEHE), Curtin University: Perth.

2.3 Attrition, completion and employment outcomes should be complemented with three additional core measures

The Australian Government's current focus on completion, attrition and employment outcomes reflects a concern that as universities have increased enrolment numbers under the demand driven system, degree completion rates have fallen and some employment organisations have voiced dissatisfaction with the quality of Australian university graduates.

Our proposed approach to weighting and contextualising attrition and completion rates will solve some of the potential issues with using these metrics as a proxy for performance. However, the fact remains that student retention is a weak proxy for teaching quality given broader environmental influences.

The best way to capture the performance of Australian universities is to include three additional core performance measures spanning different HESA objectives:

- Student satisfaction to provide an outcomes-focused measure of teaching quality
- Participation rates of equity groups to identify each university's efficacy in expanding access to higher education
- Employer satisfaction ratings to provide a measure of how well universities are preparing graduates for the needs of the Australian economy

2.3.1 Student satisfaction

Student satisfaction ratings provide an effective way to measure a range of indicators including overall student experience, teaching quality, student support, and learning environment. For this reason, they form the basis of the UK's Teaching Excellence Framework.

Including a performance measure on student satisfaction ratings presents significant opportunities

- Student satisfaction ratings push a greater emphasis on outcomes and provides a more direct proxy measure for teaching quality than simply looking at the number of students completing their degree
- Including student satisfaction as a core measure provides students with a greater voice in the performance framework and will drive a greater student-centric focus within universities
- As with the Student Experience Survey used by QILT, student satisfaction can be broken into different categories to provide a richer understanding of teaching quality, student experience, learning infrastructure and student support.

Given that QILT already reports on student satisfaction, including this as a measure presents minimal additional burden for universities and the Australian Government. Theoretically, the Government could simply take the existing QILT data and include it in performance calculations.

2.3.2 Employer satisfaction

Employer satisfaction ratings provide an effective way to measure how effectively universities are preparing graduates for the future needs of the Australian economy. Earlier this year, Minister Birmingham noted that:

"Australia has excellent universities but they must place student outcomes at the forefront of their considerations to meet the needs of our economy, employers and ultimately boost the employment prospects of graduates"[31]

Including a performance measure on employer satisfaction ratings presents significant opportunities:

- Employer satisfaction ratings push a greater emphasis on outcomes and provides a more direct proxy measure for teaching quality and the work-readiness of university graduates
- Including employer satisfaction as a core measure provides industry with a greater voice in the performance framework and will drive a greater focus within universities on work-readiness
- Universities will have a strong incentive to collaborate more closely with employers on teaching delivery, including industry-embedded content and work placement opportunities

Given that QILT already reports on employer satisfaction, including this as a measure presents minimal additional burden for universities and the Australian Government. Theoretically, the Government could simply take the existing QILT data and include it in performance calculations.

2.3.3 Participation rates

Equity of access to higher education forms a key plank of the HESA objectives and has governed the direction of the Australian system since the Bradley Review of Higher Education in 2008.

Participation rates are the most simple, logical and obvious way to measure university performance on expanding equity of access to higher education. As the Higher Education Equity Ranking Project said in its report:

"Participation in higher education remains the foundation focus of higher education equity policy, both nationally and internationally. It is logical to include participation in any assessment of higher education equity performance on that basis alone."[32]

It is no surprise that other jurisdictions with advanced university performance frameworks have chosen to use participation rates for students from disadvantaged backgrounds. As discussed above in Section 1.2, these jurisdictions include Pennsylvania, Tennessee and New Zealand.

Including a performance measure on equity of access also provides important context to performance in other areas. As the Higher Education Equity Ranking Project identified, extensive research demonstrates that certain under-represented equity groups require different resources, support and teaching approaches.[33]

Given that the Australian Department of Education and Training already gathers student data on participation rates for equity groups, including this as a measure presents minimal additional burden for universities and the Australian Government.

---

[31] Media Release, 'Improving the Workplace Potential of University Graduates', Minister Simon Birmingham, 8 January 2018, available at < https://www.senatorbirmingham.com.au/improving-the-employment-potential-of-graduates/>.

[32] Edwards, D., Koshy, P., McMillan, J., Pitman, T., & Zhang, L.T., *Higher Education Ranking Report: Stage 1 Report*, April 2018, Curtin University & Australian Council for Educational Research.

[33] Edwards, D., Koshy, P., McMillan, J., Pitman, T., & Zhang, L.T., *Higher Education Ranking Report: Stage 1 Report*, April 2018, Curtin University & Australian Council for Educational Research.

2.4 Universities should be able to select three to four optional measures aligned to their mission and strategic context

As discussed in Section 1.2, Pennsylvania's performance framework has been highly effective at evaluating university performance in the context of each institution's unique strategic and operating environment. By allowing universities to select some performance measures, Pennsylvania provides universities with a greater voice in identifying areas of focus which they will be held accountable for. This collaborative approach has been cited by researchers as one reason that Pennsylvania's performance funding system has survived for so long when so many other states have had to discontinue performance funding.[34]

After conducting research into other jurisdictions and consulting with the six members of the Regional Universities Network, we developed a list of examples which the Government could include as approved optional measures. This list is set out below in Figure 12.

Figure 12 - Our suggested list of optional measures for university performance

Teaching quality	Equity of access	Social, cultural & economic need
Teaching incentives *(staff survey to determine recognition for teaching)*	Resources for student support	% graduates in areas of national / regional priority
% students engaged in work placements	'Closing the achievement gap' (i.e. *Completion ratios of equity groups/total*)	% of budget spent on activities with 'direct community benefit'
% students who achieve reason for study within 5 yrs.	Progression to further qualifications *(HDR, coursework, professional accreditation)*	Economic value of the university to the local community
Graduate starting salary	Closing the gap in professional accreditation (*e.g. Medicine, Law, Engineering etc.*)	Employment outcomes in areas of national / regional priority
Progression to further qualifications *(e.g. undergraduate to postgraduate studies, professional accreditation)*	Institution-specific commitments agreed with Government	Regional employment outcomes
Institution-specific commitments agreed with Government		Community development indicators *(e.g. progress on local educational attainment, household income etc.)*
		Institution-specific commitments agreed with Government

We propose that the following optional measures be included given their particular relevance to RUN:

- **Regional employment outcomes** are a key focus for RUN members and forms one of the reasons why Governments fund and support regional universities
- **Economic value of the university to the local community** captures the significant resources RUN members deploy to support the social, cultural and economic fabric of regional areas
- **Institution-specific commitments agreed with government** provide an opportunity to capture unique arrangements (for example, where universities run dual-sector campuses)

Without these measures, the Australian Government may have greater difficulty attempting to properly capture the impact of regional universities within its performance framework.

[34] Ziskin, M. B., Hossler, D., Rabourn, K., Cekic, O., & Hwang, Y. (2014). *Outcomes-Based Funding: Current Status, Promising Practices and Emerging Trends*. Toronto: Higher Education Quality Council of Ontario, pg 10.

Figure 13 – Case Study: Engagement at Central Queensland University

Central Queensland University (CQU) set itself the goal of becoming the most engaged and connected university in Australia. In adopting this unique institutional mission, CQU decided to hold itself and its staff to account through new performance measures designed to track the level of community engagement.

CQU's success demonstrates that community engagement could form an optional performance measure within our proposed framework – either as one of a university's three optional measures or as an institution-specific measure drawing on unique institutional data,

"Engagement is not some separate thing that we do – that would make it harder to measure."

Prof. Pierre Viljoen, CQU Deputy Vice-Chancellor (Engagement, Campuses & Mackay-Whitsunday Region)

To achieve their aim, CQU had to define 'engagement' as something integrated into all university activities and something that can be measured. CQU's Deputy Vice-Chancellor (Engagement) set out a new engagement agenda which covered all levels of post-school education, research and service across the University.

Crucially, engagement activities were linked to academic roles, with promotion dependent on an ability to demonstrate engagement across all activities in the position's scope, and how that links into the respective school's engagement strategy. This aimed to incentivise researchers to link in with external partners for research, and for staff to maintain relationship with professional bodies.

To measure engagement, CQU created a set of measures and a database to capture all relevant engagement activities and the supporting data needed to track performance.

By creating measures for engagement and tracking it through a database, CQU has been able to make engagement part of what defines their performance.

3 We propose a short submissions process to contextualise performance measures

3.1 A submissions process will allow governments to weight quantitative metrics against other contextual factors

Under the Teaching Excellence Framework in the UK, a panel (including VCs, students and experts in education access) reviews data along with a 15-page submission before making a judgment on what 'medal' to award a university. The submission plays a critical role in determining whether institutions receive Gold, Silver or Bronze – in the last TEF round nearly one-quarter of providers were given a different award to what the standard metrics indicated.[35]

> ***"The provider statement is a critical part of the process... The panel will be able to draw on the full range of information available to it – information that includes regional employment rates and other contextual data, the absolute and benchmarked metric results and the breadth of evidence in the provider submission – to form a nuanced picture of the provider and inform a holistic judgement."***
>
> *-Chris Husbands, Chair of the TEF Panel 2017*

TEF submissions require providers to submit qualitative and quantitative information against 10 criteria broken into three categories:

1. **Teaching quality**: student engagement; valuing teaching; rigour and stretch; and feedback
2. **Learning environment**: resources; scholarship; professional practice; and personalised learning
3. **Student outcomes and learning gain**: employment and further study; employability and transferable skills; and positive outcomes for all

The UK Higher Education Academy analysed the TEF Panels' statements of findings for the 38 providers who were upgraded based on their submission and found a number of themes:

- Over three-quarters mentioned institutional cultures a which reward excellent teaching staff and provide mechanisms for identifying and supporting excellent teaching
- Over three-quarters mentioned the role of physical resources in enhancing the learning experience
- Two-thirds of the statements of findings given to upgraded providers mentioned full or partial mitigation as a factor (sixteen to Silver providers, ten to Gold)
- A majority mentioned digital resources, student engagement, course design and employability

We propose a similar submissions process for Australia, along with an independent process for evaluating performance including broad representation from within the sector. This would allow RUN members to highlight the role they play expanding access to higher education and could include:

- **institutional quantitative data** to demonstrate contribution to the economic, cultural and social development of their communities, as well as the impact of their innovative approaches to teaching on a national and international scale

[35] Simon Baker, 'TEF: In-depth analysis of the results' *Times Higher Education*, 29 June 2017, available at <https://www.timeshighereducation.com/features/tef-in-depth-analysis-of-results>.

- **context** behind **standard performance metrics** to explain why some may appear low. This has been very effective in the UK, where nearly one-quarter of providers were given a different award to what the standard metrics indicated
- **qualitative** submissions with **case studies** and **human stories** to articulate their mission, values and impact in a compelling way
- some articulation of the **unique aspects of different campuses**, including examples of innovation, dual sector arrangements, unique datasets and student profiles

3.2 Submissions will follow a common process to ensure an even playing field and minimise reporting burden

Context is extremely important for RUN universities. Even with the most comprehensive and carefully weighted metrics, regional universities provide a role which is difficult to determine on numbers alone. A submission process will allow RUN members to draw out their unique institutional strengths and narrative.

However, there is a risk for many smaller universities that an open submission process would favour large universities who could afford to expend significant resources (including on consultants) developing a lengthy and visually compelling document. Therefore, our proposed submissions process:

- follow strict formatting requirements, including a 15-page limit
- require content to address a set of criteria which mirrors HESA objectives
- require universities to provide contextual information and mitigating factors in each relevant section

Figure 14 provides an indicative example of what a submission criteria and structure may look like.

Figure 14 - Indicative structure for submissions

Section One – Strategic context
- Vision, mission, and strategy
- Operating environment
- Student profile

Section Two – Quality of teaching and learning
- Teaching quality
- Learning environment
- Student outcomes

Section Three – Expanding equity of access
- Pathways to enrolment
- Support for disadvantaged students
- Outcomes for disadvantaged students

Section Four – Meeting the social, cultural and economic needs of the community
- Social contribution
- Cultural contribution
- Economic contribution

Submissions should be evaluated by an independent and impartial process. This process should be separate to the Commonwealth, as it is under the UK Tertiary Excellence Framework. It should include a broad range of respected members of the Australian higher education sector.

We also propose the process takes into account the potential for year-to-year variance, especially given the three-year duration of most university student cohorts. Such variance has a much more significant impact on smaller, regional universities which tend to have proportionately larger changes in student profile and face one-off events such as natural disasters, or local economic shocks.